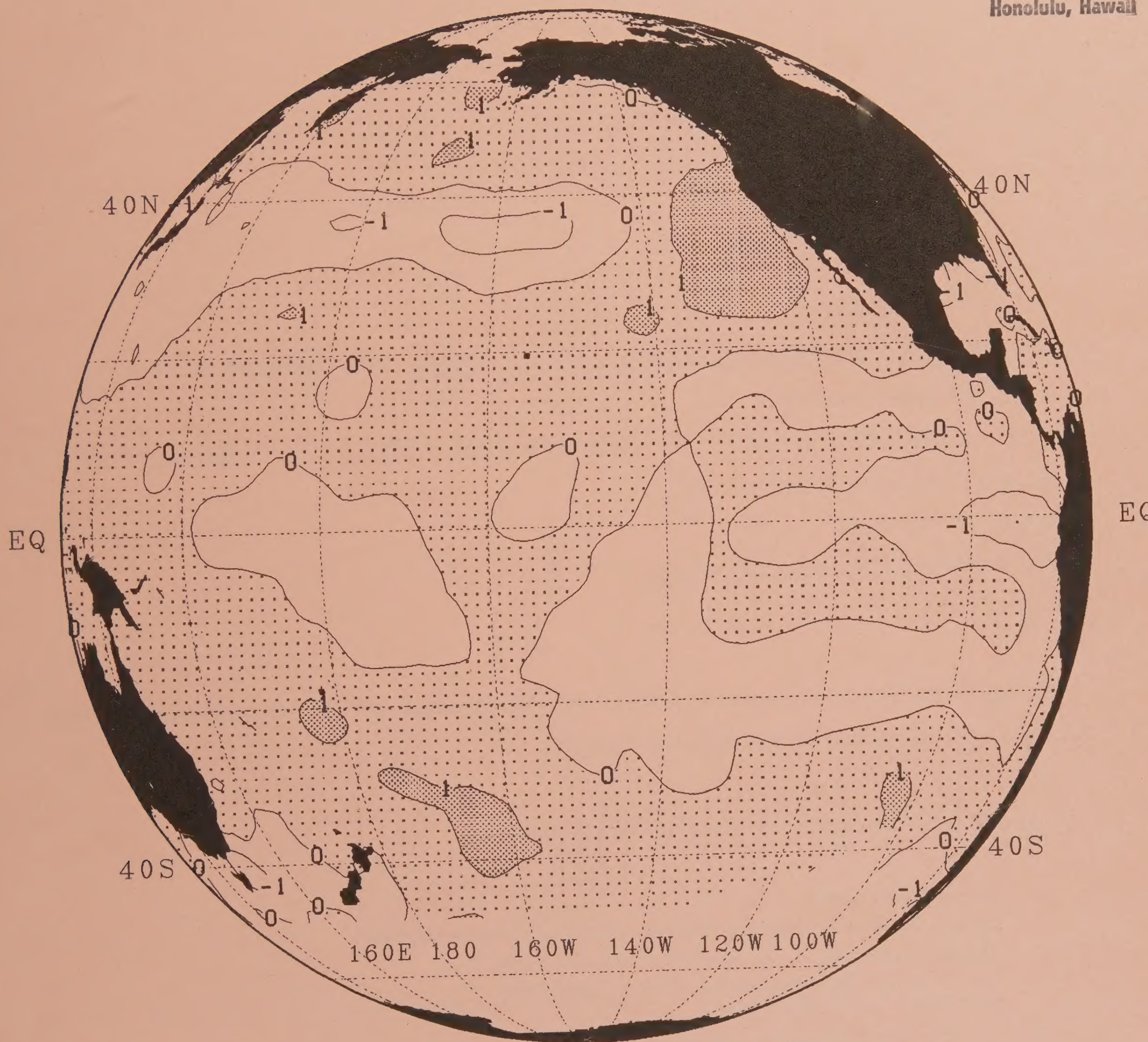
気 象 庁 海 洋 月 報

Monthly Ocean Report

April 1996 (No. 40)



El Niño Monitoring Center
Japan Meteorological Agency

気 象 庁 海 洋 気 象 部 海 洋 課
エ ル ニ ー ニ ョ 監 視 セ ン タ ー

平 成 8 年 4 月

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本月報に関する問い合わせは、

〒100　東京都千代田区大手町１-３-４　気象庁海洋気象部海洋課エルニーニョ監視センターまで。

電　話 (03) 3212-8341 (内線 5134、5135)

ＦＡＸ (03) 3211-3047

電子メール elnino@umi.hq.kishou.go.jp

Monthly Ocean Report is prepared by the El Niño Monitoring Center, Oceanographical Division, Marine Department, Japan Meteorological Agency.

Correspondence relating to this report may be directed to :

Kunio SAKURAI
Head, El Niño Monitoring Center, Oceanographical Division
Marine Department, Japan Meteorological Agency
1-3-4 Ote-machi, Chiyoda-ku, Tokyo 100 Japan
Facsimile: +81-3-3211-3047
e-mail : elnino@umi.hq.kishou.go.jp

表紙は、1996年４月の太平洋の月平均海面水温偏差図です。
陰影部は、平年より高温の海域を示しています。

The figure on the front cover shows the monthly mean SST anomalies for April 1996 in the Pacific Ocean.
Areas of positive anomalies are shaded.

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海況の特徴（１９９６年４月）

太平洋の海況

太平洋赤道域の海面水温は、東部の110°W以東では平年より0.5℃以上低く、特に、105°W以東の南米沖では１℃以上低かった。一方、150°E以西では平年より0.5℃以上高かった。エルニーニョ監視海域（4°S～4°N、150°W～90°W）の海面水温偏差は、-0.4℃だった（第１表、第１図、第６図）。

太平洋の赤道に沿った表層水温は、東部では海面から深さ100m付近まで平年より低く、西部では水温躍層付近で大きな正偏差が見られた（第９図）。

北太平洋の30°Nから40°Nでは、日本近海から145°Wにかけて、平年より海面水温の低い海域が広がり、特に170°Eから150°Wにかけては１℃以上低かった。一方、北米西岸沖及び45°N以北では平年より高く、特に北米西岸沖では平年より１℃以上高かった（第６図）。

日本近海の海況

日本近海の海面水温は、全般に平年より低く、特に常磐沖、日本海西部、本州南方では平年より１℃以上低かった（第24図）。

黒潮は、九州・四国に接岸して流れた後、紀伊半島から東に向かい、八丈島の北を経て房総半島沖を北東に流れていた（第27図）。

本州東方の親潮系の冷水は、沿岸寄りの分枝は40.6°N,142.5°E付近まで、沖合の分枝は38.0°N,144.4°E付近まで、それぞれ達していた（第26図）。

熱帯の気象

対流活動は、インド洋東部から太平洋西部とＩＴＣＺで平年より活発である一方、太平洋中部から東部の赤道付近は平年より不活発だった。200hPaでの大規模な発散中心はニューギニア島北部の赤道付近にあり、平年より西に20°、北に10°偏っていた。熱帯太平洋の海面気圧偏差は170°Wより東で正、西で負のラニーニャ的なパターンが現れ、ＳＯＩは３月と同様顕著な正値（+0.8）となった。２月以降明瞭な季節内変動の東進が持続している（第１表、第3～5図、第12図）。

［気象庁長期予報課提供］

HIGHLIGHTS April 1996

Pacific

In the equatorial Pacific, sea surface temperature (SST) anomalies colder than -0.5°C were observed east of 110°W; between Ecuador and 105°W anomalies colder than -1°C were found. Warm SST anomalies greater than +0.5°C were found west of 150°E near the equator. The SST index for region B (Fig. 1) was -0.4°C (Table 1 and Figs. 1 and 6).

Cold anomalies of subsurface temperature were found along the equator in the eastern Pacific, extending from the sea surface to about 100m, while positive anomalies were found at thermocline depth in the western Pacific (Fig. 9).

SSTs were below normal west of 145°W between 30°N and 40°N in the North Pacific, especially in the area between 170°E and 150°W where negative SST anomalies less than -1°C were observed. Positive SST anomalies prevailed north of 45°N and off the west coast of North America. In particular, SSTs were more than 1 °C above normal off the west coast of North America (Fig. 6).

Seas adjacent to Japan

SSTs were generally below normal in the seas adjacent to Japan, especially off Joban, in the western part of the Japan Sea and south of Honshu where negative SST anomalies less than -1.0°C were observed (Fig. 24).

The Kuroshio flowed along the coast of Kyushu and Shikoku, then eastward from the Kii Peninsula. After passing north of Hachijo Island, it flowed northeastward off the Boso Peninsula (Fig. 27).

Coastal and off-coastal branches of the Oyashio cold water (below 5°C at a 100 m depth) extended southward to 40.6°N, 142.5°E and 38.0°N, 144.4°E, respectively (Fig. 26).

Atmospheric conditions in the tropics

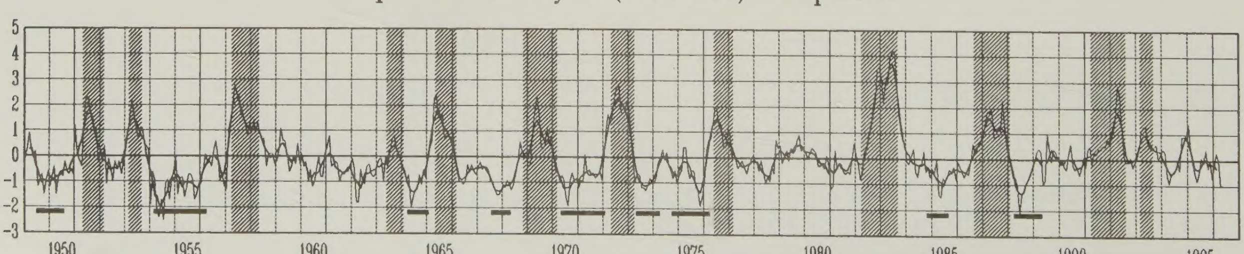
Convective activities were stronger than normal over the eastern Indian Ocean, the western Pacific and ITCZ and weaker than normal over the central and eastern equatorial Pacific. The center of large scale divergence at 200hPa was located to the north of New Guinea, shifted by 20° westward and 10° northward of its normal position. The sea level pressure anomaly in the tropical Pacific showed the La Niña like pattern, that is, positive to the east of 170°W and negative to the west. The SOI showed a significantly positive value (+0.8) as in March. The intraseasonal oscillation has been clearly seen to propagate eastward since February. (Table 1, Figs. 3-5 and 12). [Prepared by the Long-range Forecast Division, JMA]

Monthly mean SST for region C from 1949 to 1996

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Normal	24.3	25.7	25.9	25.1	23.9	22.7	21.6	20.6	20.3	20.7	21.5	22.6
1949	24.2	26.0	26.8	25.3	23.8	22.9	20.4	19.7	19.6	19.2	20.5	22.0
1950	23.1	24.9	25.5	23.6	23.2	22.1	20.8	20.4	19.7	20.0	21.0	21.9
1951	25.5	25.8	25.7	24.7	25.1	25.0	23.9	22.4	21.6	21.7	22.6	22.4
1952	24.4	25.5	26.3	24.0	23.8	22.2	20.6	20.4	19.8	20.5	20.8	22.4
1953	24.5	26.5	27.5	27.3	25.5	23.8	22.3	21.6	21.4	21.1	21.9	22.8
1954	22.4	25.1	25.0	23.0	21.5	21.0	19.1	19.5	19.4	19.0	20.6	22.0
1955	24.3	24.2	25.0	24.3	22.3	21.4	20.9	19.9	19.4	19.0	20.0	21.5
1956	23.2	25.2	26.0	24.8	23.7	22.3	21.8	21.2	20.3	19.7	20.9	21.4
1957	23.0	26.7	27.4	27.2	26.7	25.1	24.0	22.2	21.9	21.9	22.3	23.9
1958	25.2	27.1	26.8	26.4	24.8	23.3	22.3	20.2	20.4	20.8	21.6	22.3
1959	24.1	25.9	27.0	25.7	24.5	22.7	21.0	20.2	20.3	20.4	22.0	22.3
1960	24.4	25.3	25.7	24.1	23.4	21.5	20.6	20.1	20.3	19.9	20.7	22.7
1961	24.6	26.5	25.5	24.8	23.7	22.4	20.6	19.9	19.7	20.1	20.9	22.3
1962	24.2	25.2	24.1	23.3	23.4	21.7	20.5	20.2	20.0	20.0	20.7	21.9
1963	24.0	25.6	25.8	24.1	23.9	22.3	21.8	21.3	21.1	21.0	21.6	22.5
1964	23.8	25.1	24.9	24.4	21.9	21.1	20.3	19.3	19.6	19.6	21.0	21.8
1965	24.1	26.0	26.5	27.4	26.3	24.2	23.1	22.3	21.0	21.5	22.3	23.5
1966	25.2	25.5	25.3	24.1	22.9	21.6	20.7	20.3	19.7	20.4	20.9	21.9
1967	23.9	25.5	25.4	24.7	23.5	22.2	20.6	19.6	19.0	19.2	20.0	21.3
1968	23.2	24.5	25.0	24.0	22.6	21.6	21.0	20.4	20.9	20.9	21.5	22.8
1969	23.9	25.4	26.8	26.8	26.3	24.4	22.0	20.9	20.8	21.8	22.0	23.4
1970	24.5	25.1	25.3	24.1	23.2	21.8	20.0	18.7	19.4	20.1	20.6	21.8
1971	23.1	24.8	24.9	25.2	23.3	22.0	20.9	20.0	19.5	20.0	21.0	21.7
1972	24.2	26.7	27.6	26.4	25.4	25.0	24.3	23.4	22.1	22.4	23.3	24.8
1973	26.1	26.5	25.8	24.1	23.3	22.0	20.4	19.4	19.0	19.6	20.7	21.6
1974	23.3	24.9	25.7	25.1	24.2	22.6	21.8	20.3	19.8	19.9	21.0	21.6
1975	23.6	25.2	26.3	25.5	23.5	21.9	21.1	20.1	19.1	19.4	19.6	21.1
1976	23.4	26.0	26.6	25.8	25.2	24.7	23.5	21.8	21.6	21.1	21.9	23.7
1977	25.3	25.8	26.1	25.0	23.5	22.4	21.5	20.2	19.7	20.4	21.4	22.7
1978	24.2	25.5	25.4	25.0	23.3	21.7	20.9	19.7	20.0	20.1	22.2	23.0
1979	24.8	25.5	26.0	25.4	23.8	23.1	21.8	20.9	21.0	21.6	21.8	23.0
1980	24.5	25.7	26.1	25.5	24.2	22.9	21.3	20.3	20.1	20.3	21.6	22.3
1981	23.1	24.6	26.2	24.7	23.7	22.5	21.1	20.0	19.8	20.1	21.5	23.2
1982	24.4	25.5	25.1	24.6	24.2	23.1	22.5	21.8	22.0	22.9	25.0	26.2
1983	27.4	27.9	28.9	28.0	27.9	26.9	25.8	23.9	22.1	21.9	22.2	23.2
1984	24.2	25.5	26.0	25.5	23.4	22.0	21.4	20.4	20.6	20.2	21.2	21.9
1985	23.8	25.2	25.9	23.7	22.4	22.0	20.7	19.9	19.9	20.2	21.2	21.8
1986	24.2	25.4	25.4	24.4	23.4	22.1	21.4	21.2	20.5	21.1	22.2	23.2
1987	25.2	27.2	27.8	26.9	25.9	23.5	22.5	21.5	21.3	23.0	22.8	23.1
1988	24.5	25.5	25.2	24.4	22.8	20.6	20.2	19.4	19.4	19.9	20.9	22.2
1989	24.2	26.0	26.3	25.4	22.9	21.9	22.6	21.0	20.2	21.1	21.8	22.6
1990	24.1	25.7	25.6	24.7	24.1	23.3	21.4	20.2	20.0	20.1	21.2	22.7
1991	24.0	26.1	26.4	24.9	24.2	22.9	22.0	21.0	20.8	21.2	22.3	23.2
1992	25.1	26.8	27.5	28.0	26.4	23.7	21.6	20.5	20.2	20.8	21.2	22.5
1993	24.3	26.1	27.0	26.4	25.2	23.3	22.1	21.0	20.8	21.3	21.5	22.8
1994	24.7	26.0	25.3	24.2	23.4	22.2	21.2	20.6	19.9	21.6	22.4	23.6
1995	25.7	26.1	25.8	24.6	23.1	22.2	21.7	20.5	20.7	20.4	21.5	21.9
1996	24.1	26.0	25.9	24.1								

表A　C海域（10° S-0°, 90° W-80° W）の1949年～1996年の月平均海面水温（℃）
平年値は各月の30年間（1961年～1990年）の平均値

Table A　Monthly mean SST (°C) for region C (10° S-0°, 90° W-80° W) from 1949 to 1996.
Normals are computed from 30-year (1961-1990) base period.



エルニーニョ現象　El Niño event　　ラニーニャ現象　La Niña event

図A　C海域の海面水温偏差時系列図（1949年～1996年）

Fig. A　Time series of monthly mean SST anomalies (°C) for region C from 1949 to 1996

DATE	SEA SURFACE TEMPERATURE AND ANOMALY (°C)								SEA LEVEL ANOMALY (cm)					
	Region D 14N-Eq. 130E-150E		Region A 4N-4S 160E-150W		Region B 4N-4S 150W-90W		Region C Eq.-10S 90W-80W		Yap 10N,138E	Rabaul 4S,152E	Majuro 7N,171E	Tarawa 1N,173E	Christ-mas 2N,157W	Santa Cruz 1S, 90W
MAY 95	29.2	+0.1	29.0	+0.5	26.2	-0.4	23.1	-0.8	-3.2	6.4	5.7	3.8	2.1	-7.5
JUN 95	29.6	+0.3	29.0	+0.5	26.0	-0.1	22.2	-0.5	-0.8	5.5	-0.6	2.2	-0.4	-2.4
JUL 95	29.5	+0.3	28.7	+0.2	25.3	+0.1	21.7	+0.1	5.3	10.7	1.0	-0.2	-5.6	-0.3
AUG 95	29.8	+0.7	28.4	0.0	24.3	-0.3	20.5	-0.1	3.8	15.1	6.7	-3.3	-8.9	-2.5
SEP 95	29.7	+0.5	28.1	-0.2	24.0	-0.6	20.7	+0.4	8.9	16.7	7.6	-2.7	-14.3	-2.7
OCT 95	29.8	+0.5	28.0	-0.4	23.9	-0.7	20.4	-0.3	13.0	15.5	4.6	1.1	-6.1	-4.9
NOV 95	29.7	+0.5	27.9	-0.5	23.9	-0.7	21.5	0.0	16.0	14.0	10.8	-1.5	-9.5	-3.2
DEC 95	29.5	+0.6	28.0	-0.2	24.2	-0.7	21.9	-0.7	13.5	17.2	3.5	1.0	-7.3	-6.2
JAN 96	29.0	+0.5	27.9	-0.1	25.0	-0.4	24.1	-0.2	10.3	14.7	8.2	5.8	-3.7	-4.5
FEB 96	28.6	+0.3	27.6	-0.4	25.7	-0.5	26.0	+0.3	10.9	14.6	6.2	4.8	-3.6	5.0
MAR 96	28.8	+0.4	27.8	-0.3	26.7	-0.2	25.9	0.0	9.3	12.8	-3.2	6.4	-0.7	-0.1
APR 96	29.3	+0.5	28.1	-0.1	26.7	-0.4	24.1	-1.0						

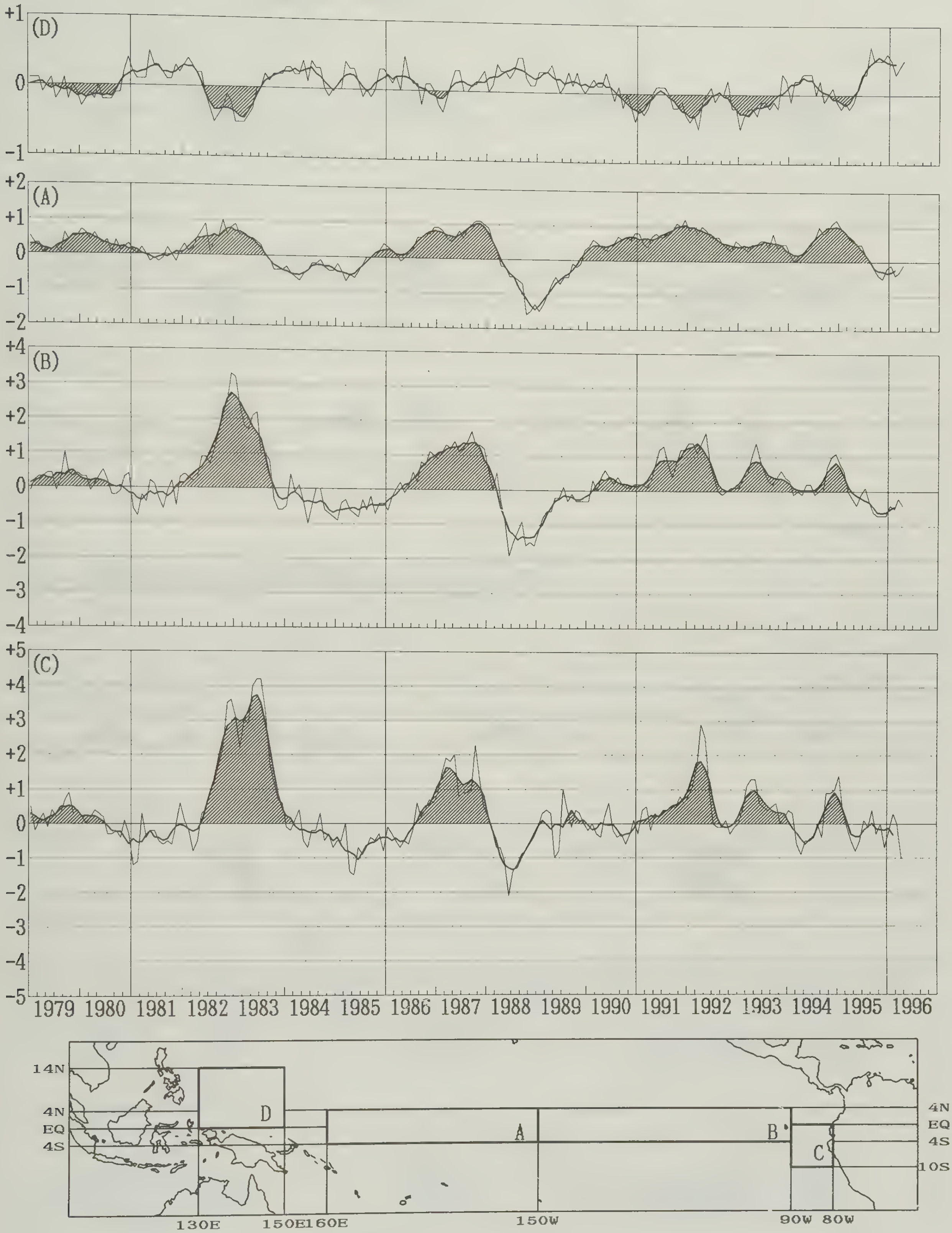
第１表（ａ）　エルニーニョ監視指数

Table 1 (a)　El Niño monitoring indices. Data sources are the El Niño Monitoring Center of JMA for the sea surface temperature and anomaly and SOC for ISLP-Pac, Department of Oceanography, University of Hawaii for the sea level anomaly.

DATE	SOI	SEA LEVEL PRESSURE ANOMALIES		HIGH CLOUD AMOUNT INDEX			EQUATORIAL ZONAL WIND INDEX				
		TAHITI 17°33'S, 149°37'W	DARWIN 12°24'S, 130°52'E	HCLD-PH 20N-10N 110E-140E	HCLD-MC 5N-5S 110E-135E	HCLD-DL 5N-5S 170E-170W	U200-IN 5N-5S 80E-100E	U200-CP 5N-5S 180 -125W	U850-WP 5N-5S 160E-175W	U850-CP 5N-5S 170W-135W	U850-EP 5N-5S 130W-100W
MAY 95	-1.0	-0.7	0.6	0.3	-1.2	0.0	-0.9	0.1	0.0	-0.1	0.2
JUN 95	-0.1	0.3	0.4	-1.8	-0.4	-0.7	0.2	0.2	-0.9	-0.4	0.6
JUL 95	0.4	0.4	-0.4	1.5	-0.1	-0.7	-1.1	0.0	-0.8	-0.8	0.3
AUG 95	0.0	0.4	0.3	0.3	0.0	-1.1	0.0	1.4	-1.3	-1.5	-0.9
SEP 95	0.2	0.4	0.0	1.4	0.7	-1.0	-2.0	1.5	-0.9	-1.0	-0.1
OCT 95	-0.3	-0.7	-0.5	0.1	0.2	-1.0	-0.7	0.6	-1.2	-0.7	0.1
NOV 95	0.1	0.1	-0.1	0.1	1.4	-1.2	-2.1	0.8	-1.1	-0.8	-0.8
DEC 95	-0.5	-0.9	0.0	4.0	1.2	-1.2	-0.3	-0.1	-1.0	-0.3	0.3
JAN 96	0.8	1.0	-0.7	1.6	1.5	-1.3	-1.0	0.8	-1.2	-1.2	0.0
FEB 96	0.1	-0.3	-0.5	1.7	1.4	-1.1	-0.7	0.4	-1.1	-1.4	-0.6
MAR 96	0.7	1.0	-0.3	0.3	-0.4	-1.2	-0.2	0.0	-1.1	-1.5	-0.3
APR 96	0.8	0.5	-0.5	2.4	0.6	-0.7	-1.3	1.1	-1.6	-1.1	-0.5

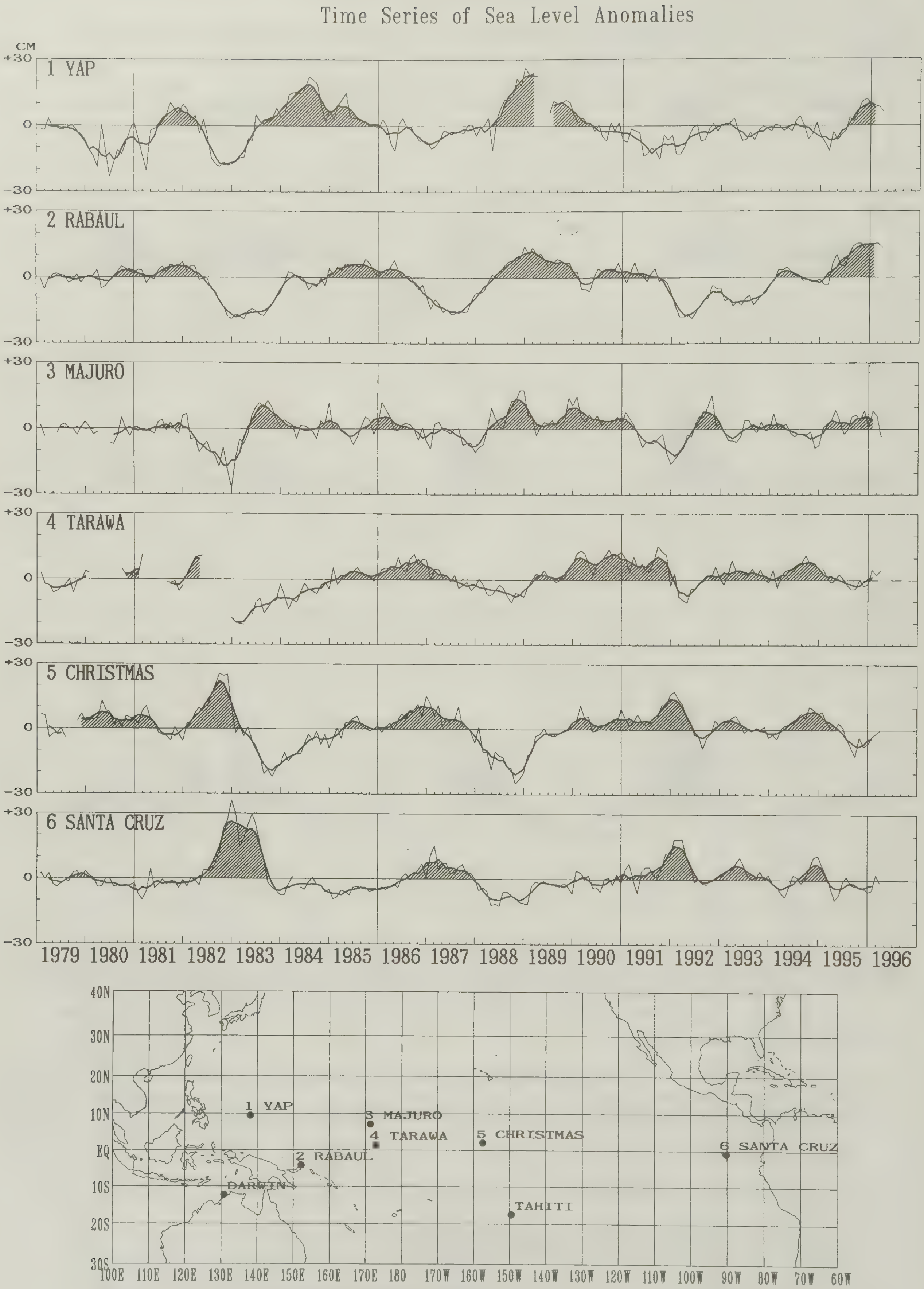
第１表（ｂ）　エルニーニョ監視指数（続き）
Table 1 (b)　El Niño monitoring indices (continued).
Data sources are the Long-range Forecast Division of JMA for the atmospheric conditions.

Time Series of Equatorial Pacific SST Anomalies



第1図　太平洋赤道域の海面水温偏差時系列図

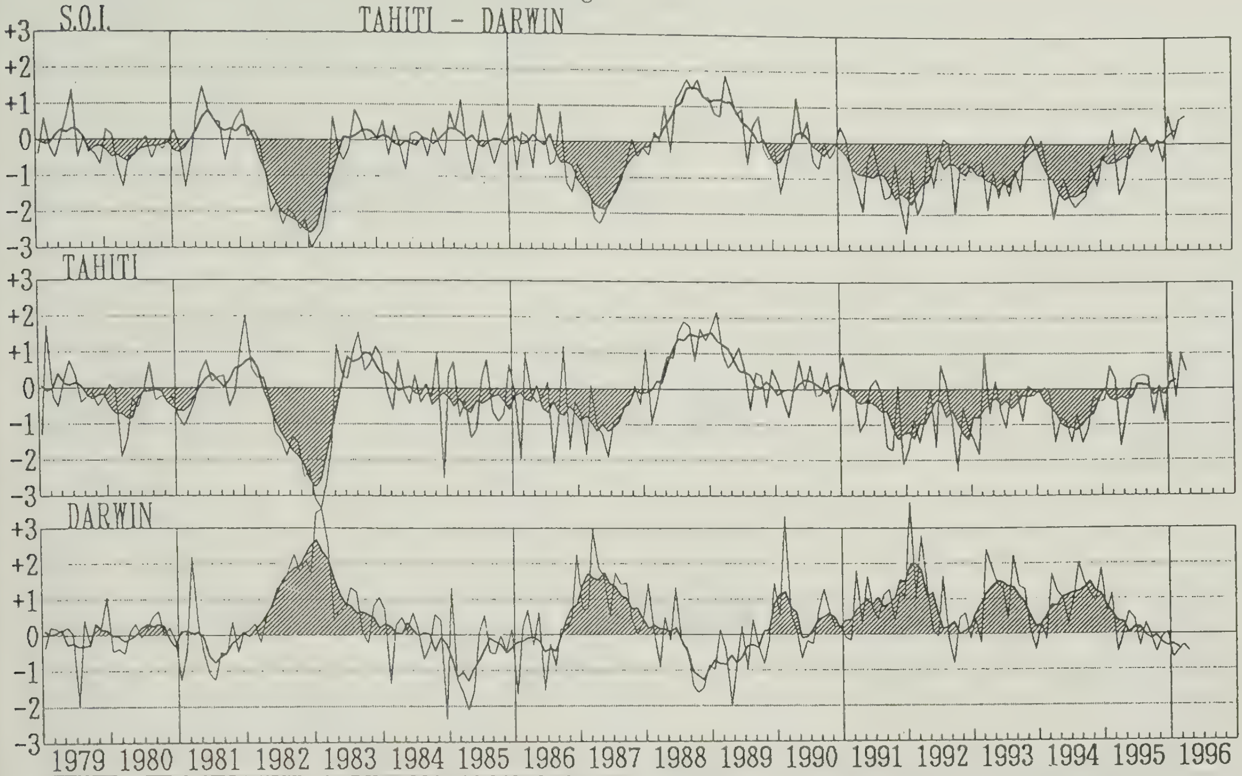
Fig.1 Time series of monthly mean SST anomalies (°C) in the equatorial Pacific Ocean for the areas indicated at the bottom.
Thin lines show the monthly means and thick lines their 5-month running means. Positive anomalies (A, B, C) and negative anomalies (D) are shaded. Anomalies are computed from the JMA climatology (1961-1990).



第2図　太平洋月平均海面水位偏差時系列図

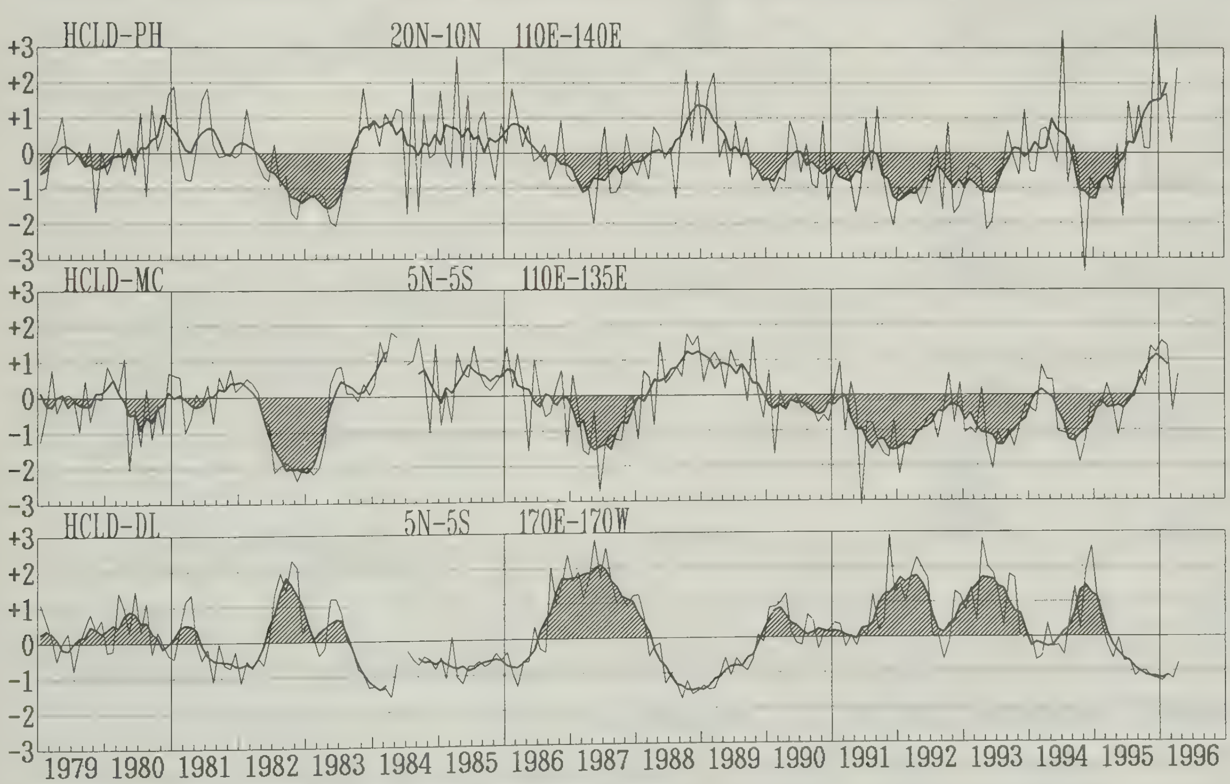
Fig.2 Time series of sea level anomalies computed from 1976-1990 monthly mean values obtained from the stations indicated at the bottom. Thin lines show the monthly mean and thick lines their 5-month running means.　Positive anomalies are shaded.

Time Series of SOI and High-Cloud Amount Index



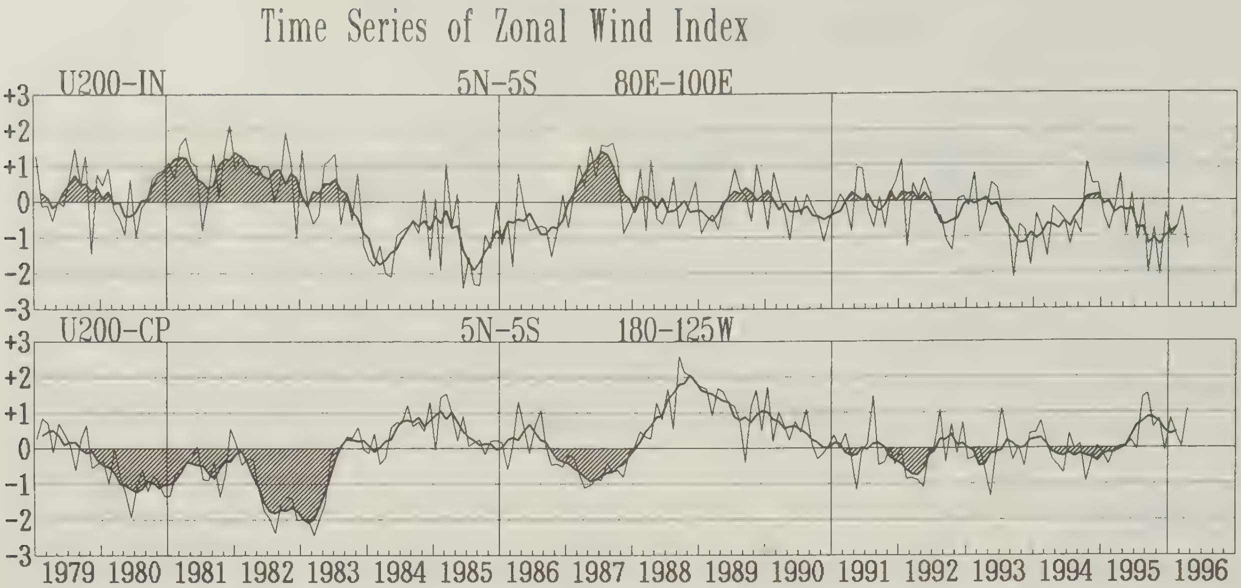
第3図　南方振動指数及び海面気圧偏差時系列図

Fig.3 Time series of the Southern Oscilation Index (top) and monthly mean sea level pressure standardized anomalies at Tahiti (middle) and Darwin (bottom). Thin lines show the monthly mean and thick lines their 5-month running means. Negative anomalies (top, middle) and posotive anomalies (bottom) are shaded. Normals and standard deviations are computed from 1961-1990 base periods. Data sources are the Long-range Forecast Division of JMA.



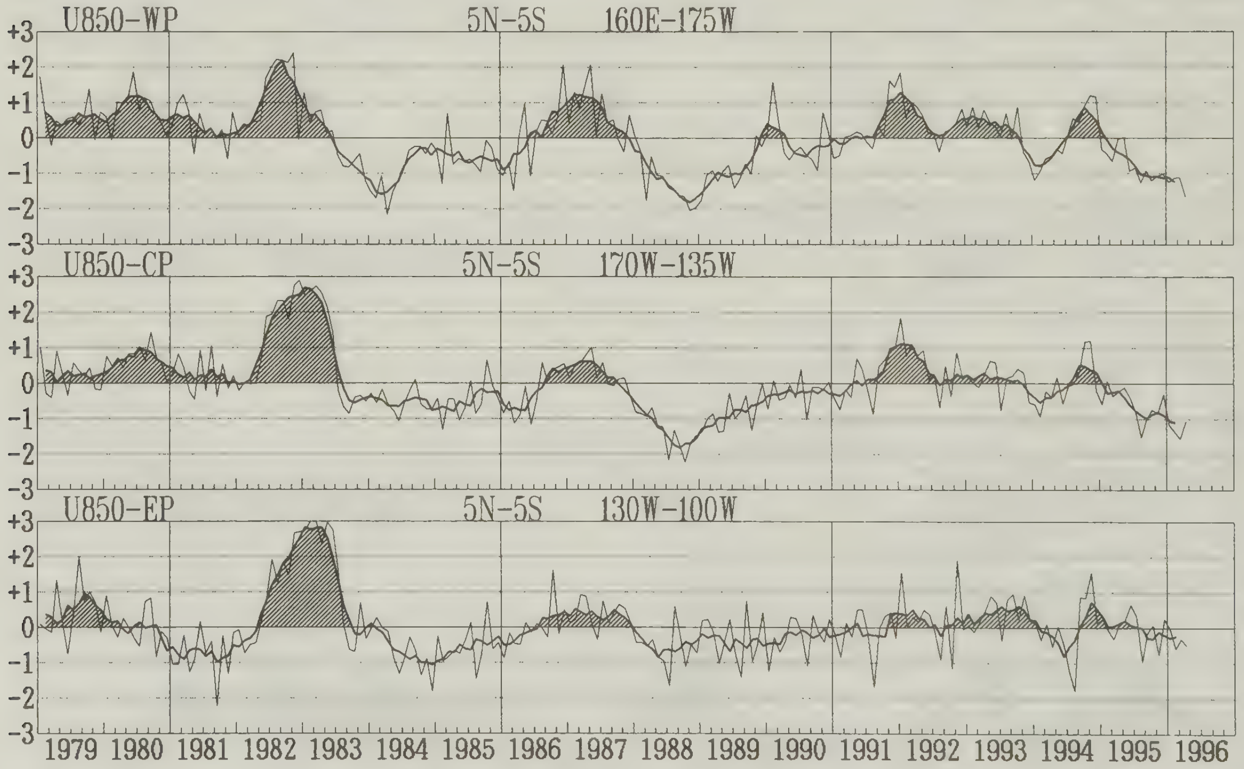
第4図　月平均上層雲量指数時系列図

Fig.4 Time series of high-cloud amount index averaged over the area 20°N-10°N, 110°E-140°E (top), 5°N-5°S, 110°E-135°E (middle), and 5°N-5°S, 170°E-170°W (bottom). Thin lines show the monthly mean and thick lines their 5-month running means. Negative anomalies (top, middle) and positive anomalies (bottom) are shaded. Normals and standard deviations are computed from 1978-1990 base periods. Data sources are the Long-range Forecast Division of JMA.



第5図-1　赤道域東西風指数(200ｈＰａ)時系列図

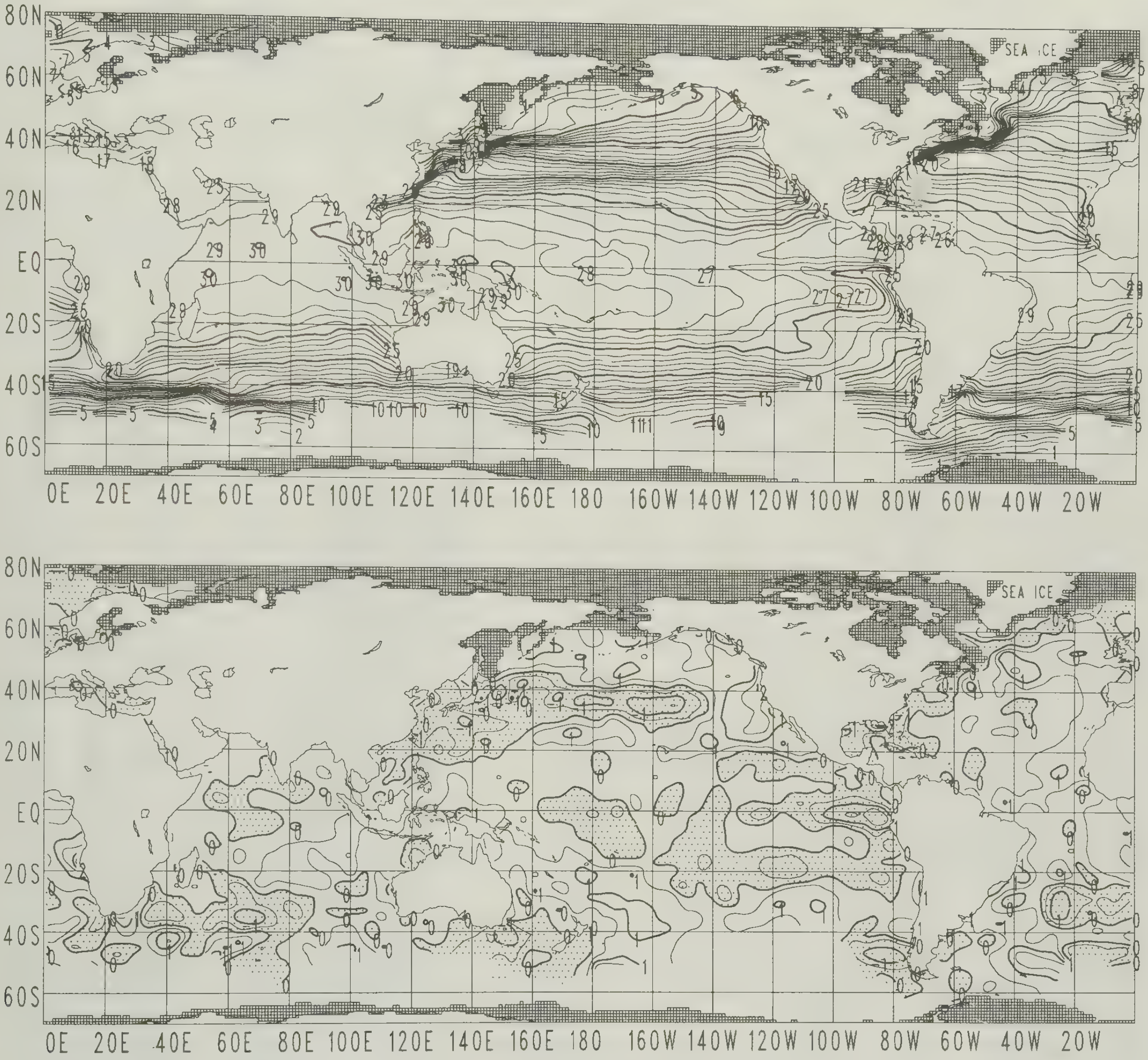
Fig.5-1 Time series of 200hPa zonal wind index averaged over the areas of 5°N-5°S, 80°E-100°E (top), and 5°N-5°S, 180°-125°W (bottom).
Thin lines show the monthly mean and thick lines their 5-month running means.
Positive anomalies (top) and negative anomalies (bottom) are shaded.
Normals and standard deviations are computed from 1979-1990 base periods.
Data sources are the Long-range Forecast Division of JMA.



第5図-2　赤道域東西風指数(850ｈＰａ)時系列図

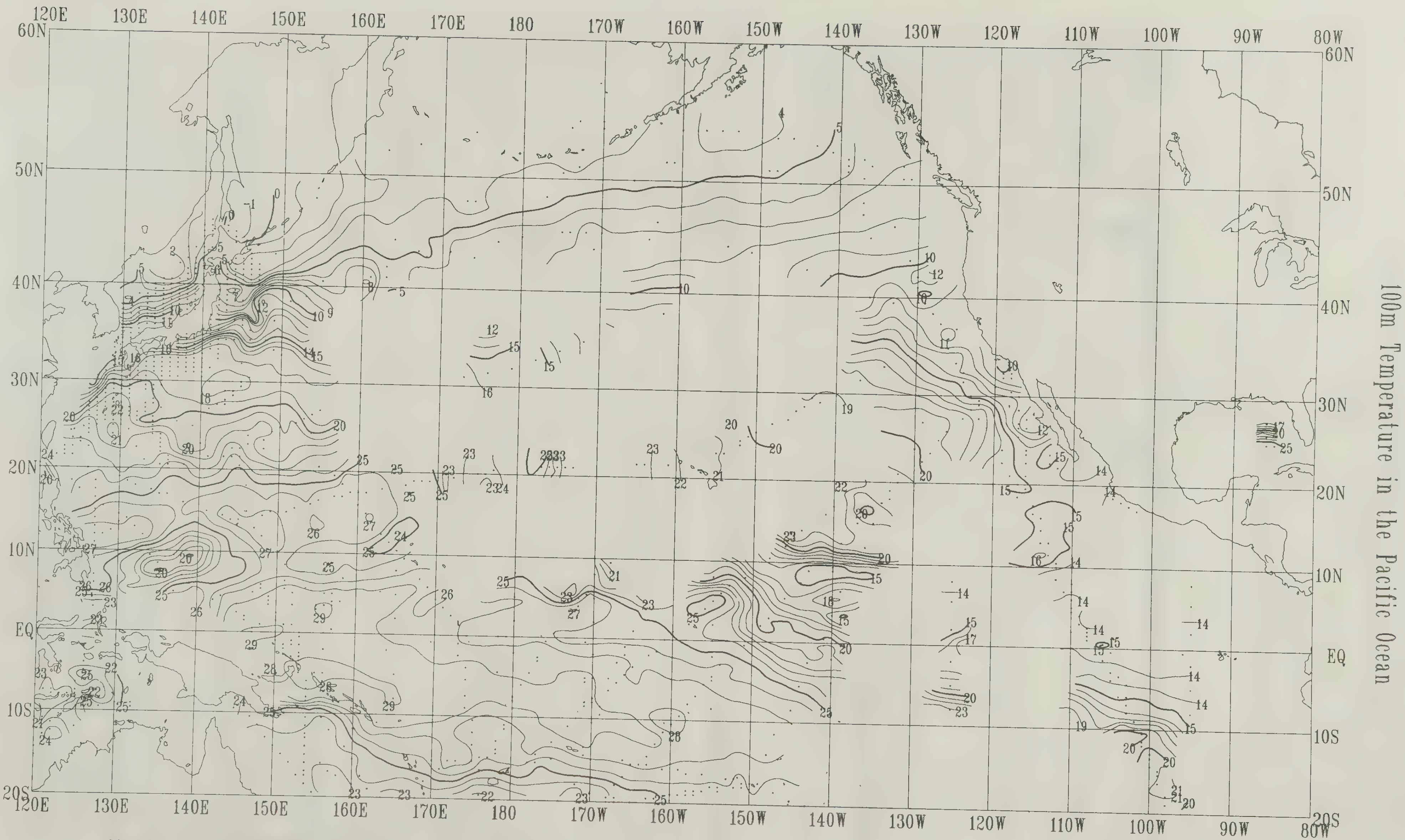
Fig.5-2 Time series of 850hPa zonal wind index averaged over the areas of 5°N-5°S, 160°E-175°W (top), 5°N-5°S, 170°W-135°W (middle), and 5°N-5°S, 130°W-100°W (bottom).　Thin lines show the monthly mean and thick lines their 5-month running means.　Positive anomalies are shaded.
Normals and standard deviations are computed from 1979-1990 base periods.
Data sources are the Long-range Forecast Division of JMA.

SST & Anomalies in the Global Ocean



第6図　全球月平均海面水温図（上）及び偏差図（下）（1996年 4月）

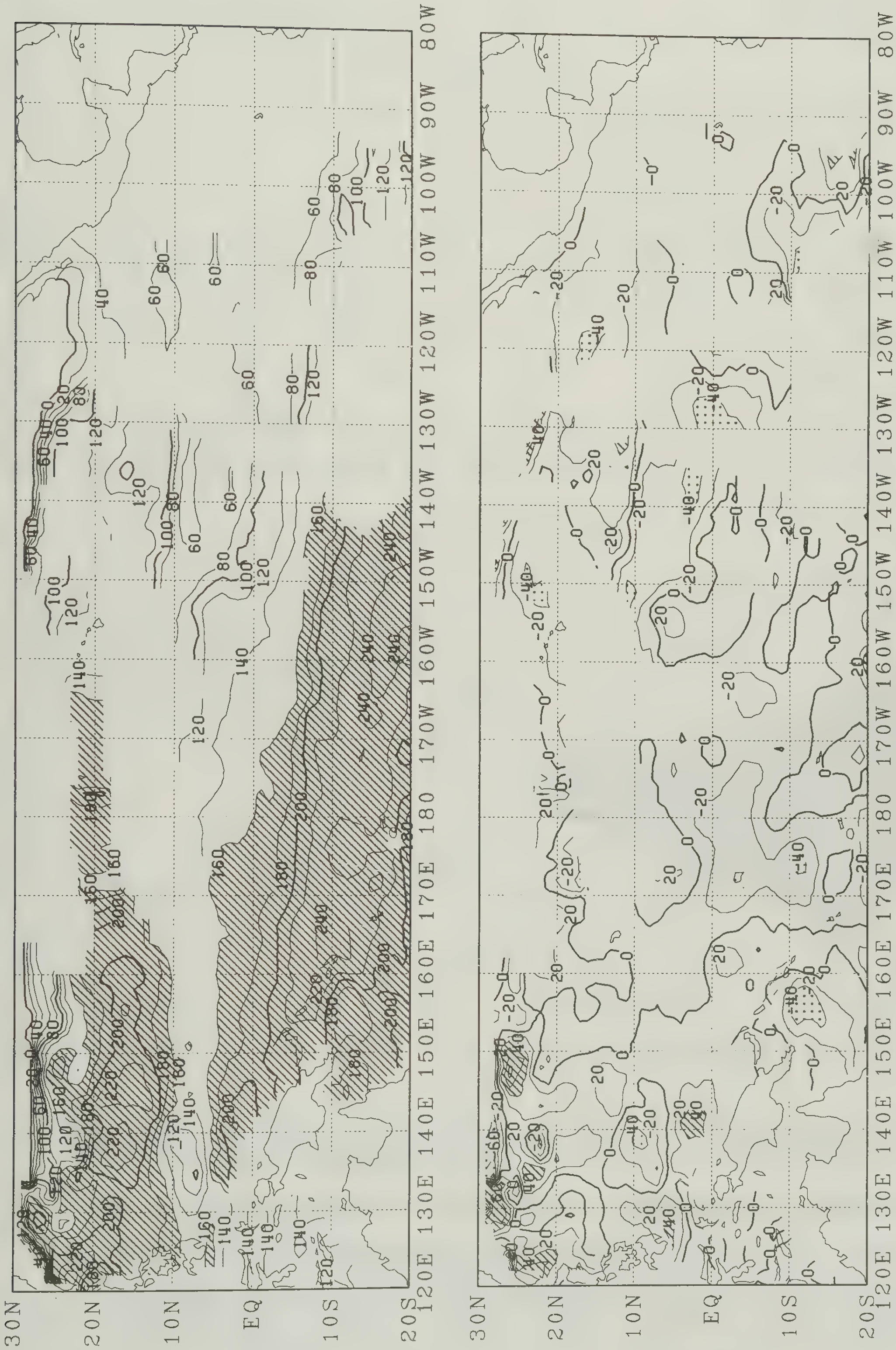
Fig.6 Monthly mean sea surface temperature over the global ocean (top) and anomalies (bottom) for APR 1996. Anomalies are computed from the JMA climatology (1961-1990) (Marine Department of JMA, 1991, Climatic charts of sea surface temperatures of the western North Pacific and the global ocean). Contour interval is 1°C (top) and additional anomaly contours of ±0.5°C are shown as thin lines. Negative anomalies are spotted. Maximum coverage of sea ice is shaded. Data sources for sea ice are U.S. National Ice Center (polar regions) and JMA (the Sea of Okhotsk).



第7図　太平洋表層水温(深さ100m)図 (1996年 4月)

Fig.7 Subsurface (100m) temperatures in the Pacific Ocean for APR 1996. Contour interval is 1°C. Observation points are denoted by dots.

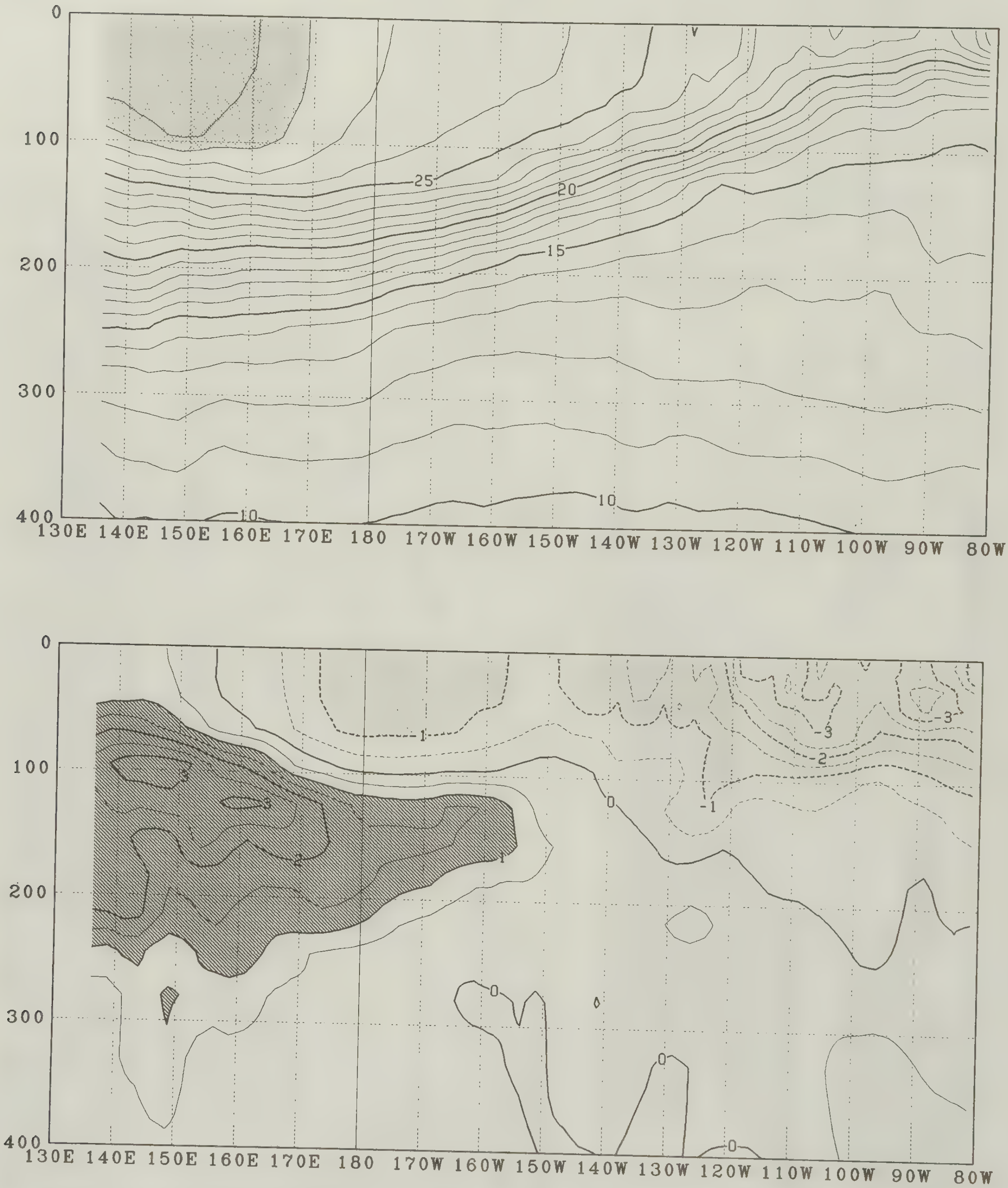
Depth of 20C & Anomalies in the Pacific Ocean



第8図　太平洋表層水温（20℃深度）図（上）及び偏差図（下）　（1996年 4月）

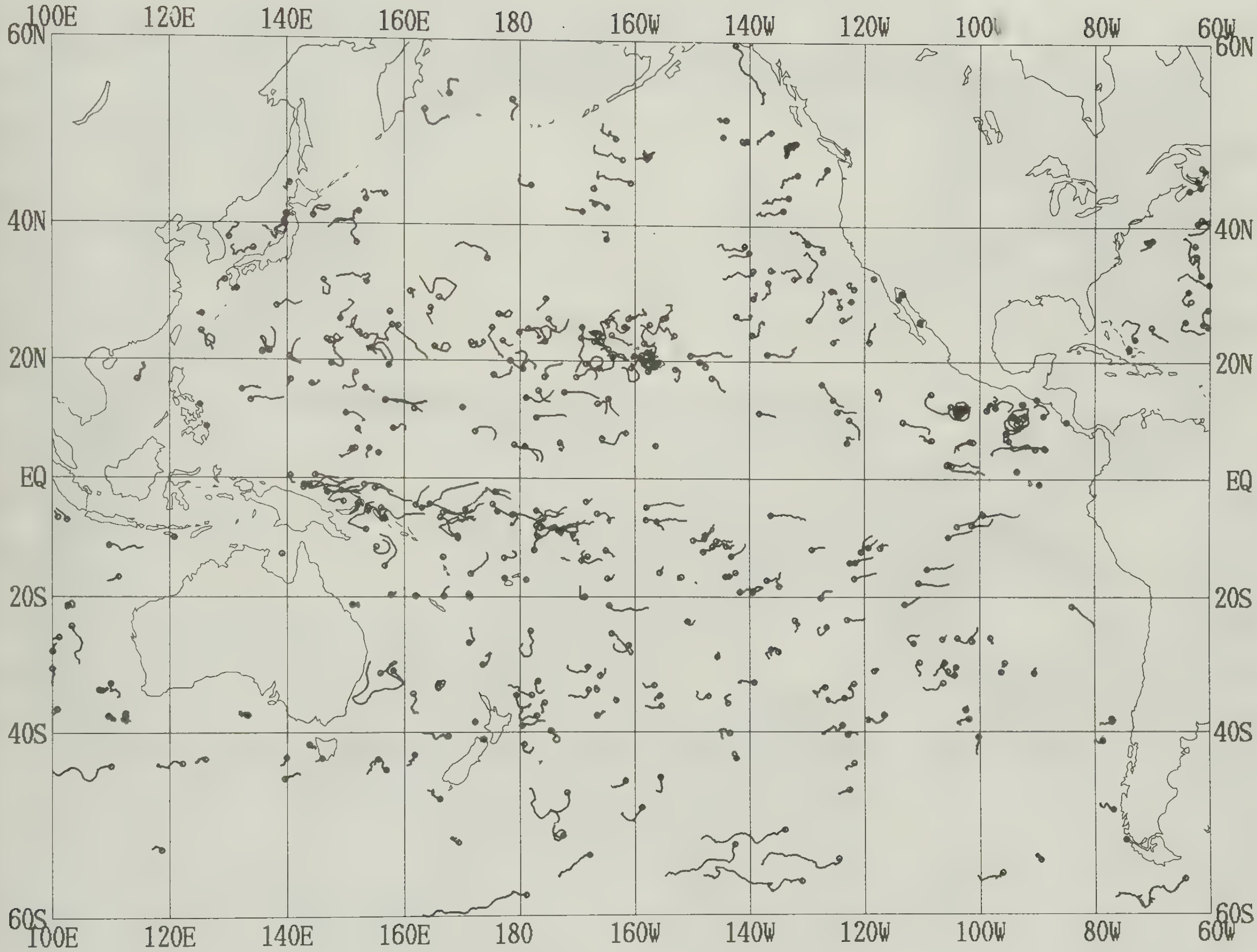
Fig.8 Depth of the 20°C isotherm in the Pacific Ocean (top) and anomalies (bottom) for APR 1996. Anomalies are computed from the climatology (Levitus, 1982, Climatological Atlas of the World Ocean, NOAA). Contour interval is 20m. Values greater than 160m in top panel are shaded. In bottom panel values greater than +40m are shaded and values less than -40m are spotted.

Depth-Longitude Sections of Equatorial Temperature & Anomalies



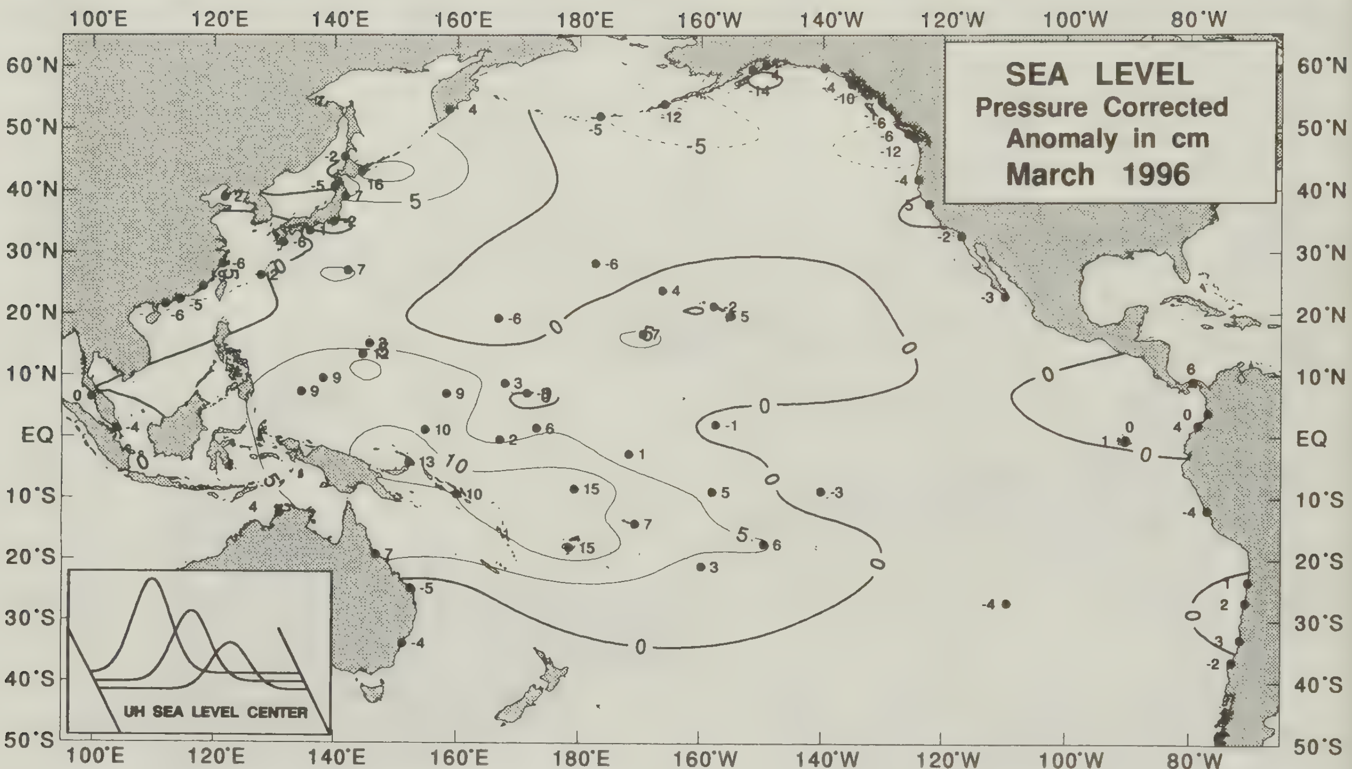
第9図　太平洋赤道に沿う表層水温（上）及び偏差（下）の深度－経度断面図（1996年 4月）

Fig.9 Depth-longitude sections of temperature (top) and anomalies (bottom) along the equator in the Pacific Ocean for APR 1996. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (top) and 0.5°C (bottom). Values greater than 28°C in top panel are shaded. In bottom panel values greater than 1°C are shaded and values less than -1°C are spotted. Anomalies are computed from 1987-1995 base period means.



第10図　太平洋ブイ流跡図(1996年 4月)

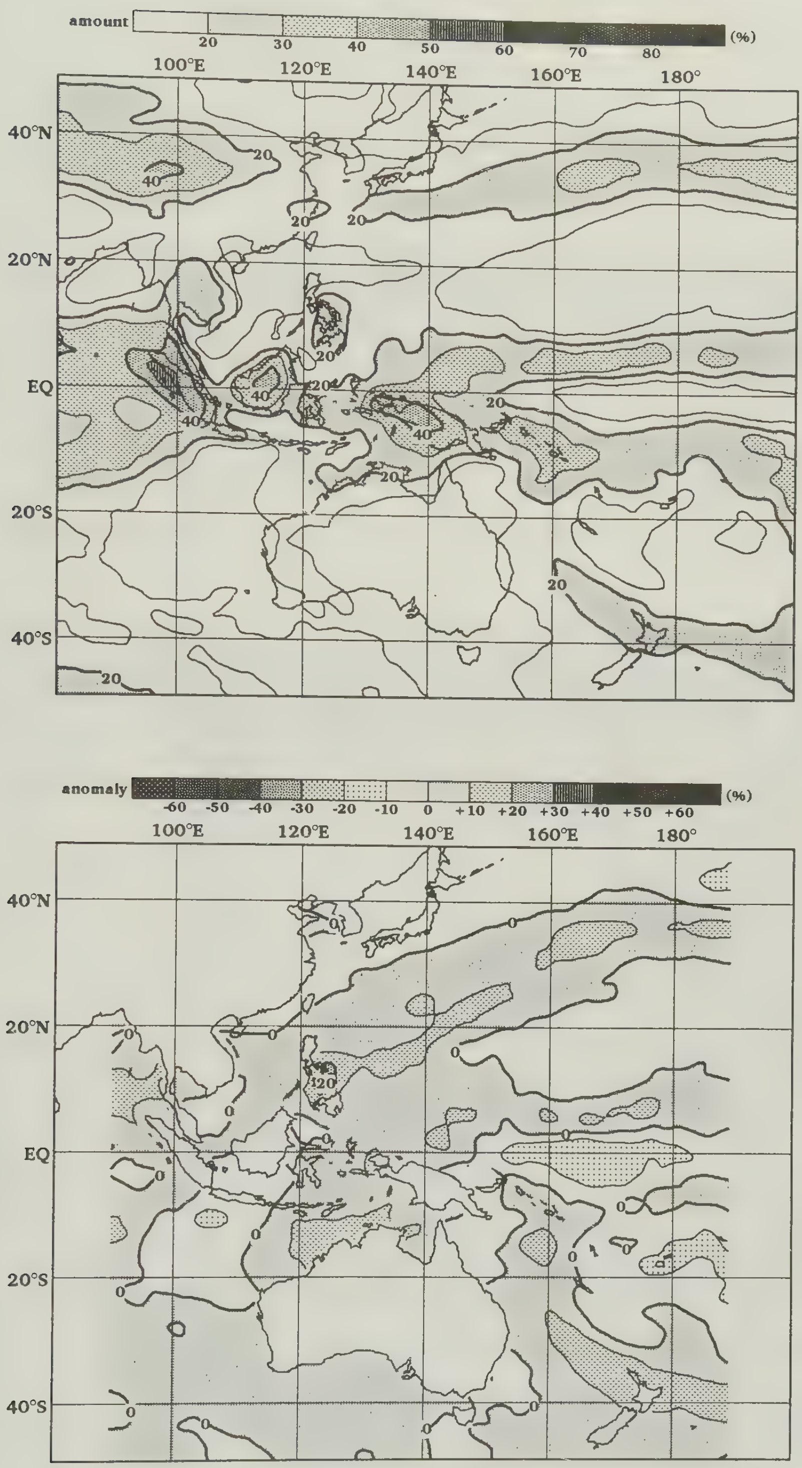
Fig.10 Movements of drifting buoys in the Pacific Ocean during APR 1996. Each track is for one buoy. Small circles represent last positions for the month.



第11図　太平洋海面水位偏差図（ 1996年 3月 ）

Fig.11 Monthly sea level anomalies for MAR 1996 obtained from mean sea level (1975-1986) adjusted for atmospheric pressure.
This figure is prepared by the SOC of ISLP-PAC, Dept. of Oceanography, Univ. of Hawaii.

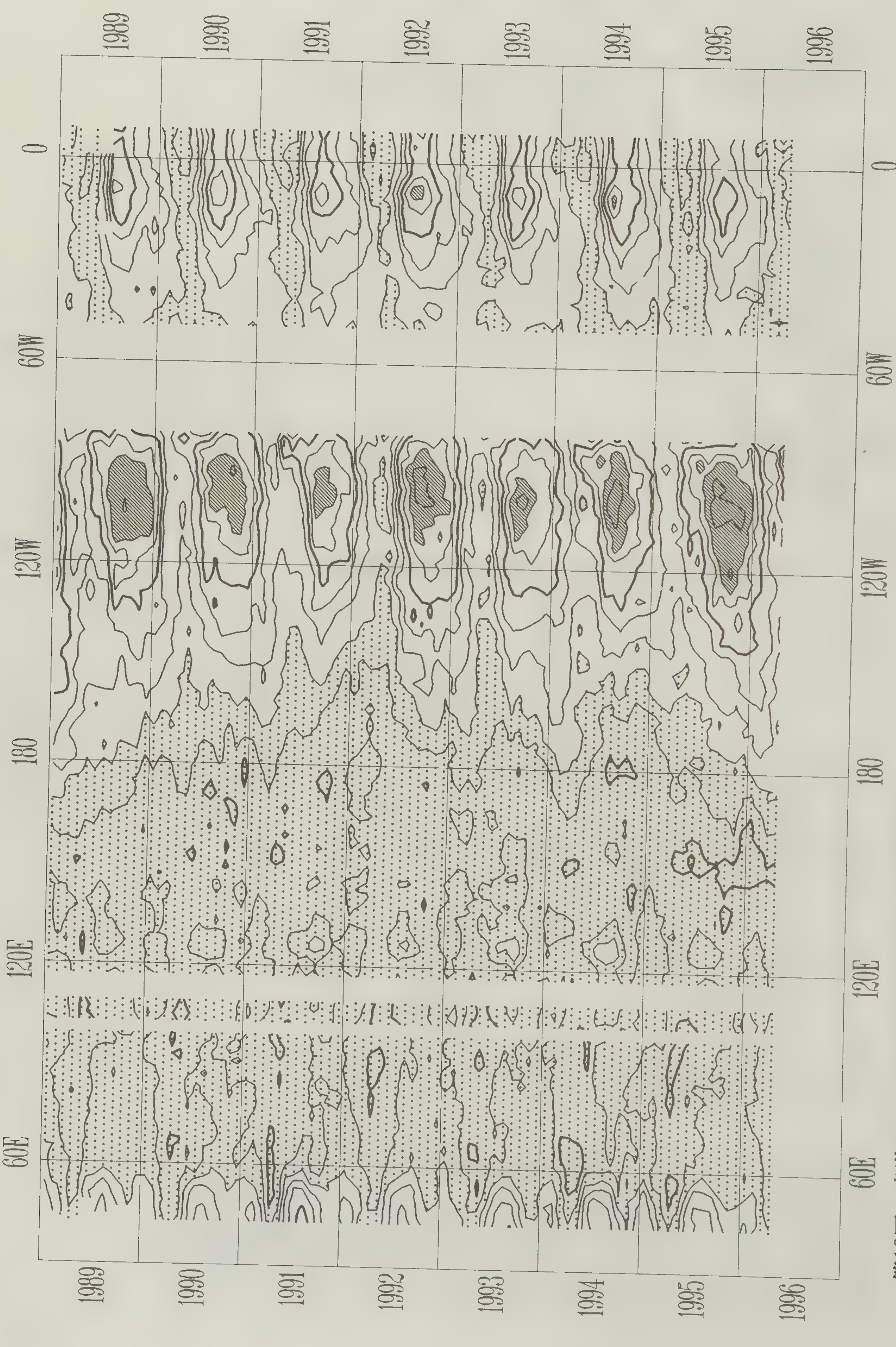
High-Cloud Amount & Anomalies



第12図　西太平洋月平均上層雲量分布図及び偏差図（1996年 4月）

Fig.12 Monthly mean of the high-cloud amount (%, top) and its anomalies (%, bottom) in the western Pacific for APR 1996. Contour interval is 10%. Anomalies are computed from 1978-1990 base period means. Figures are prepared by the Long-range Forecast Division of JMA.

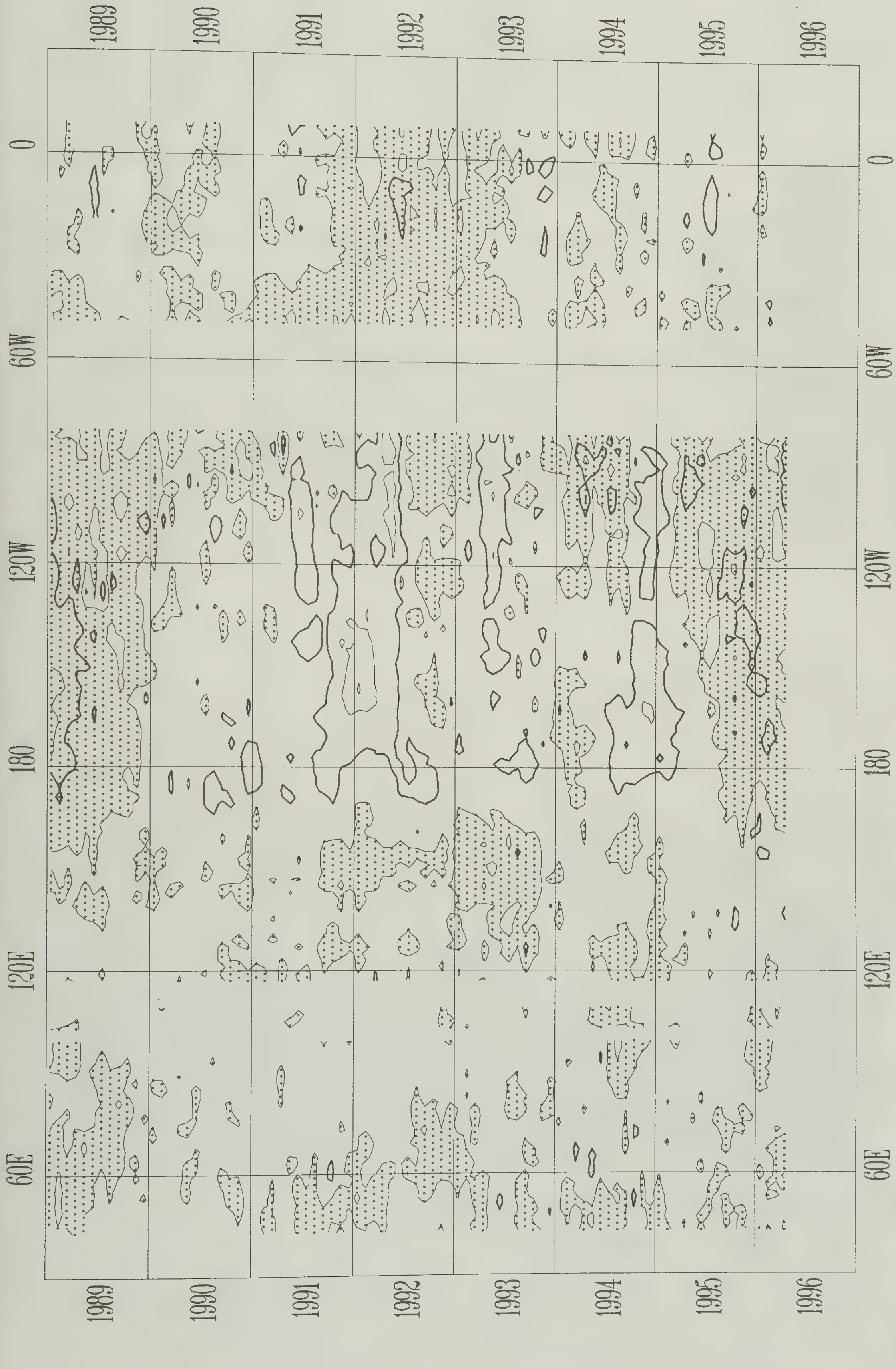
Time-Longitude Section of SST



第13図　赤道に沿う海面水温の時間－経度断面図

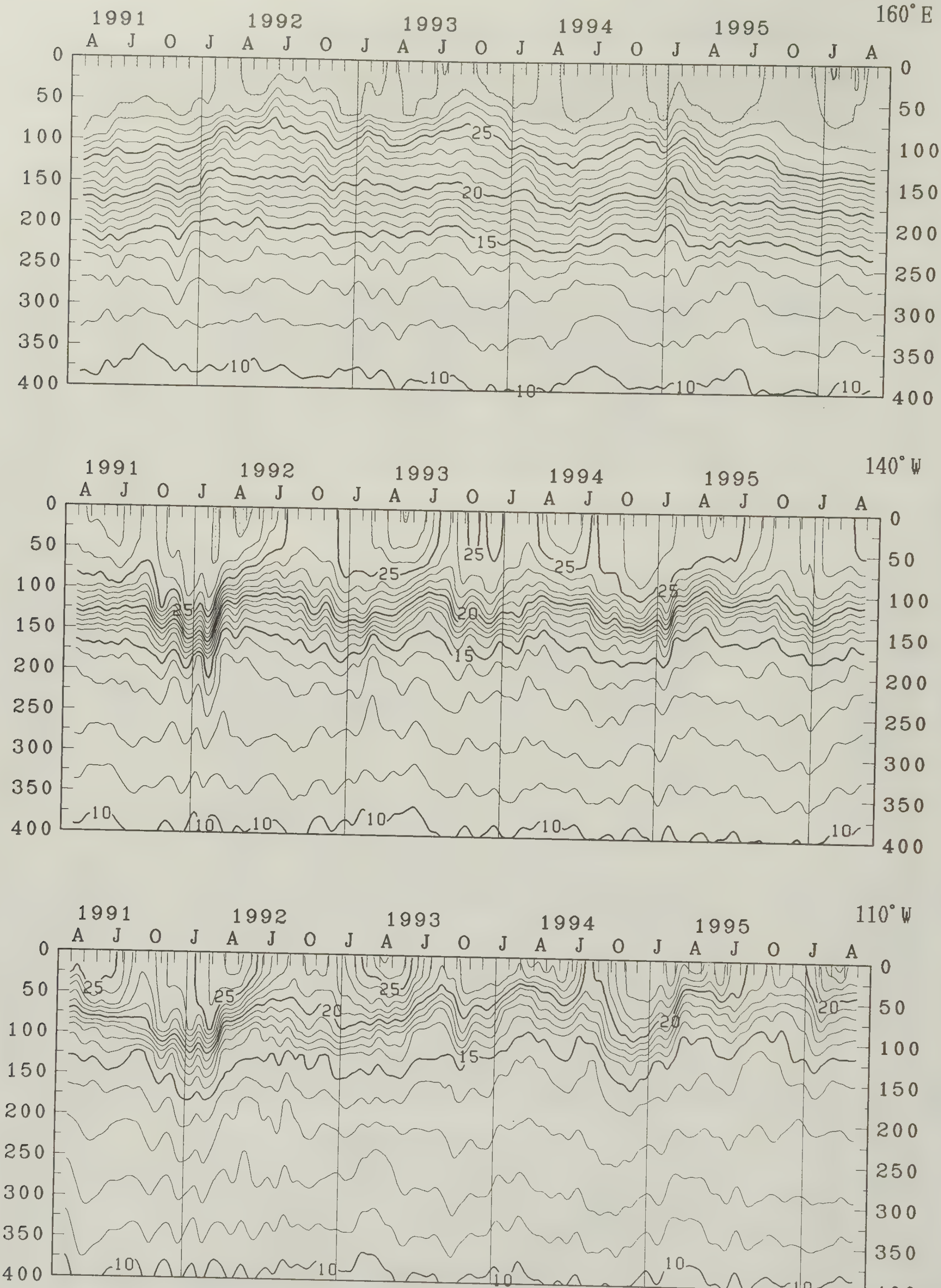
Fig.13 Time-longitude section of SSTs along the equator (2°N-2°S) in the global ocean.　Contour interval is 1°C, with thick contour lines at 25 and 30°C. SST values greater than 28°C are spotted and values less than 23°C are shaded.

Time-Longitude Section of SST Anomalies



第14図　赤道に沿う海面水温偏差の時間－経度断面図

Fig.14 Time-longitude section of SST anomalies along the equator (2°N-2°S) computed from the JMA climatology (1961-1990). Contour interval is 1°C, with thick contour lines at +1°C and -1°C. Negative anomalies are spotted.

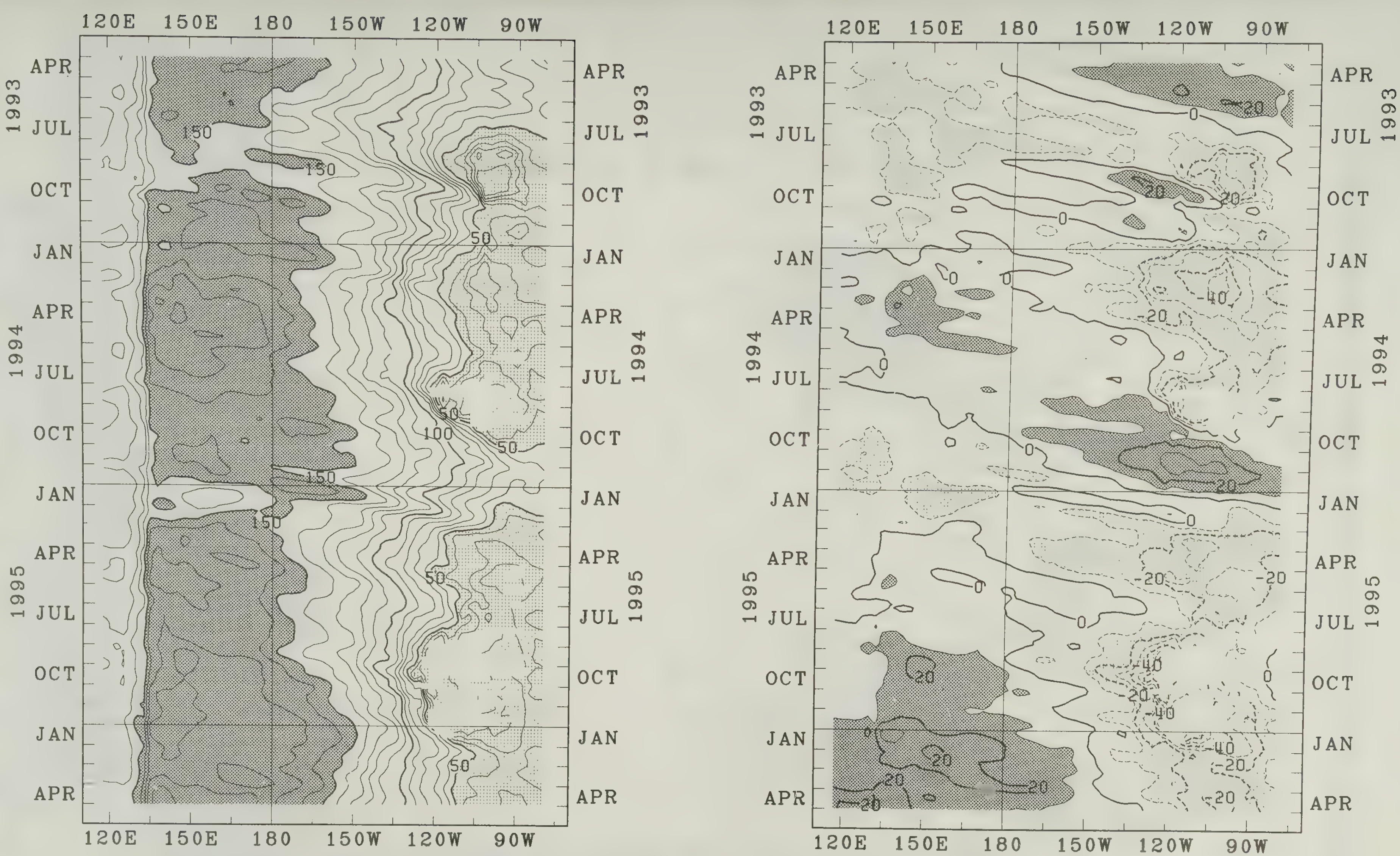


第15図　太平洋赤道域の表層水温の時間－深度断面図

(上：西部、中：中部、下：東部)

Fig.15 Time-depth sections of equatorial subsurface temperature for the western Pacific (top, 160°E), the central Pacific (middle, 140°W) and the eastern Pacific (bottom, 110°W). Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C. Values greater than 28°C are shaded.

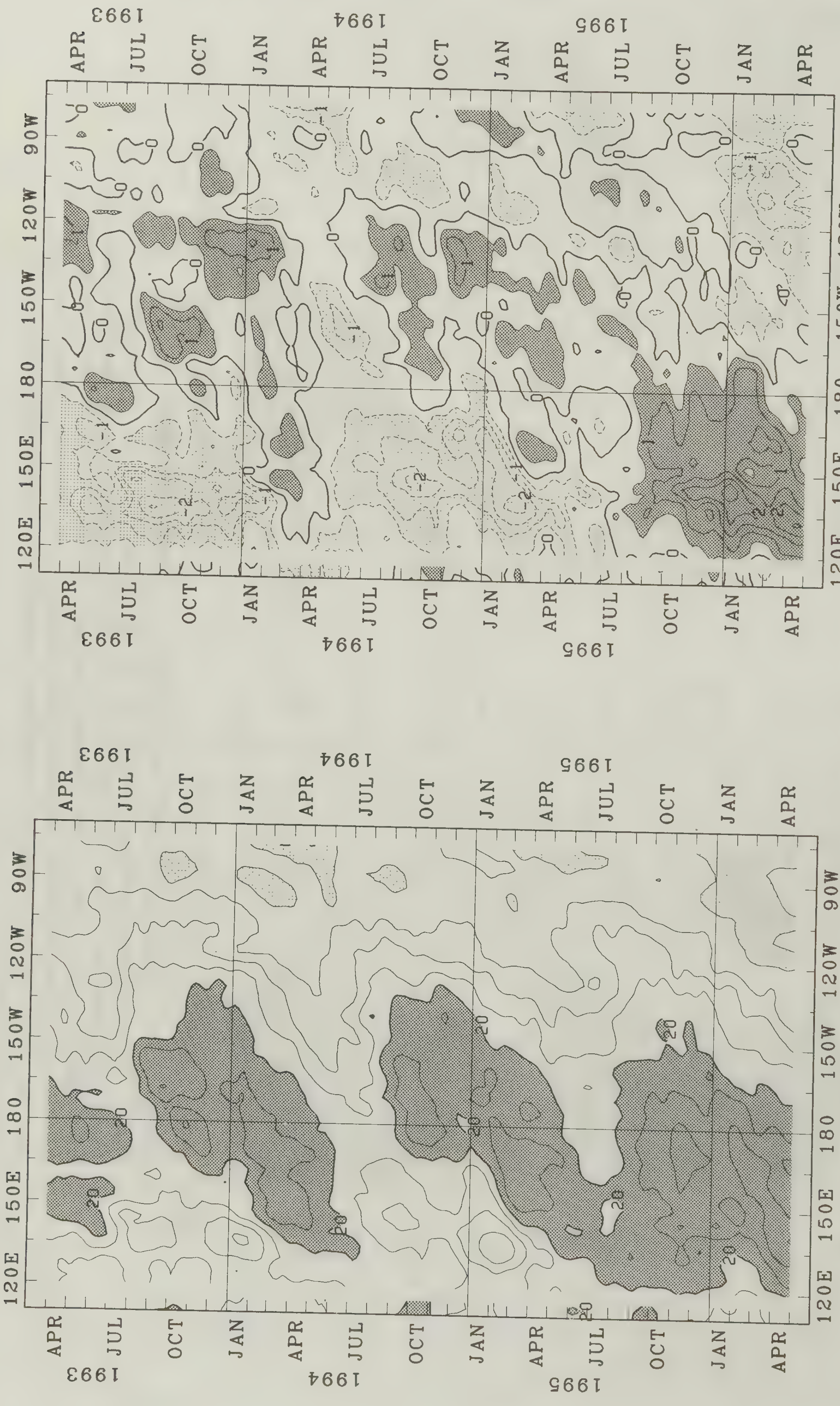
Time–Longitude Section of Depth of 20C & Anomalies (Eq.)



第16図　太平洋の赤道に沿う20℃深度（左）及び偏差（右）の時間－経度断面図

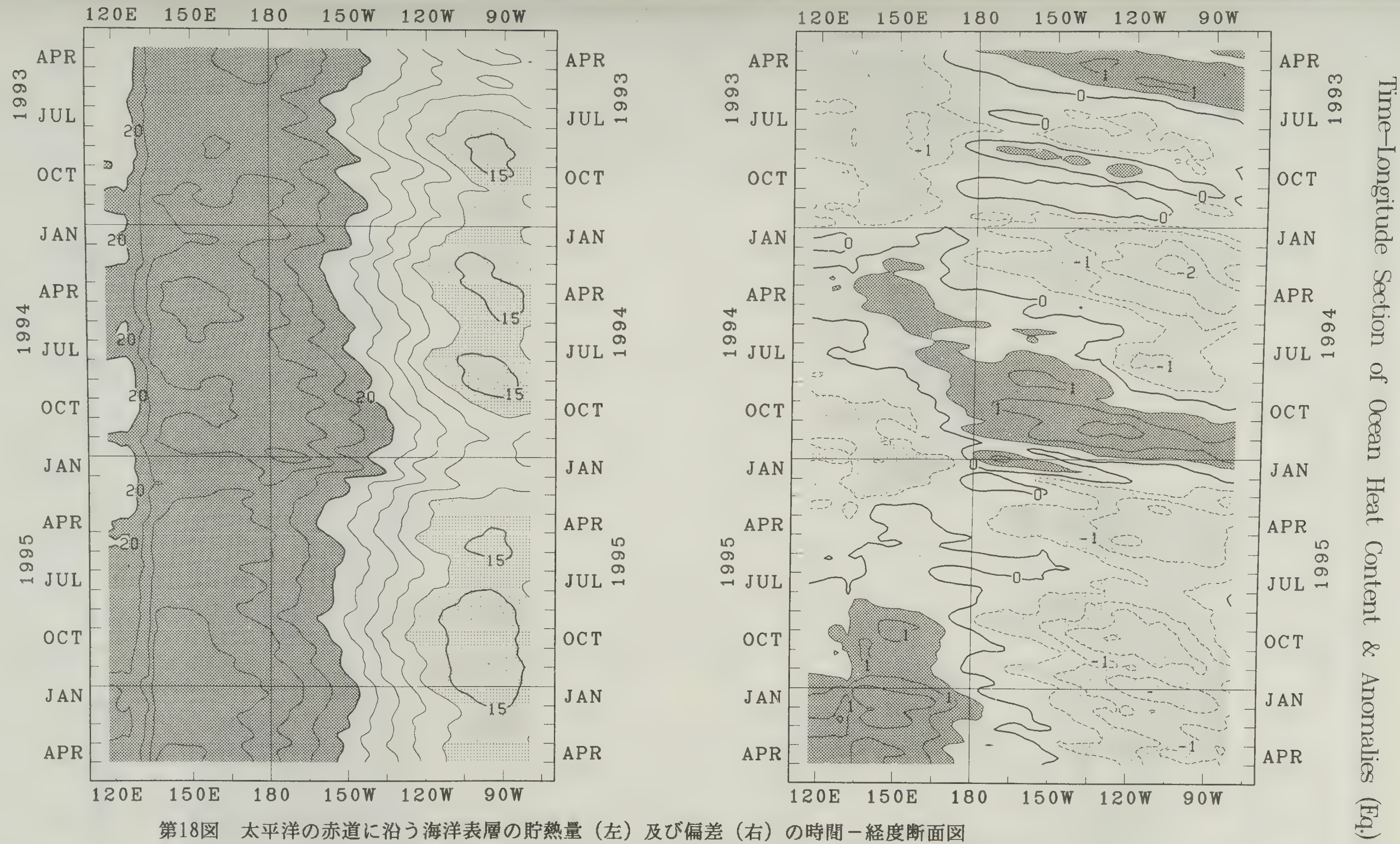
Fig.16 Time-longitude sections of depth of the 20°C isotherm along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 10m. Values in left panel greater than 150m are shaded and values less than 50m are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

Time–Longitude Section of Ocean Heat Content & Anomalies (6N)



第17図　太平洋の北緯6度線に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

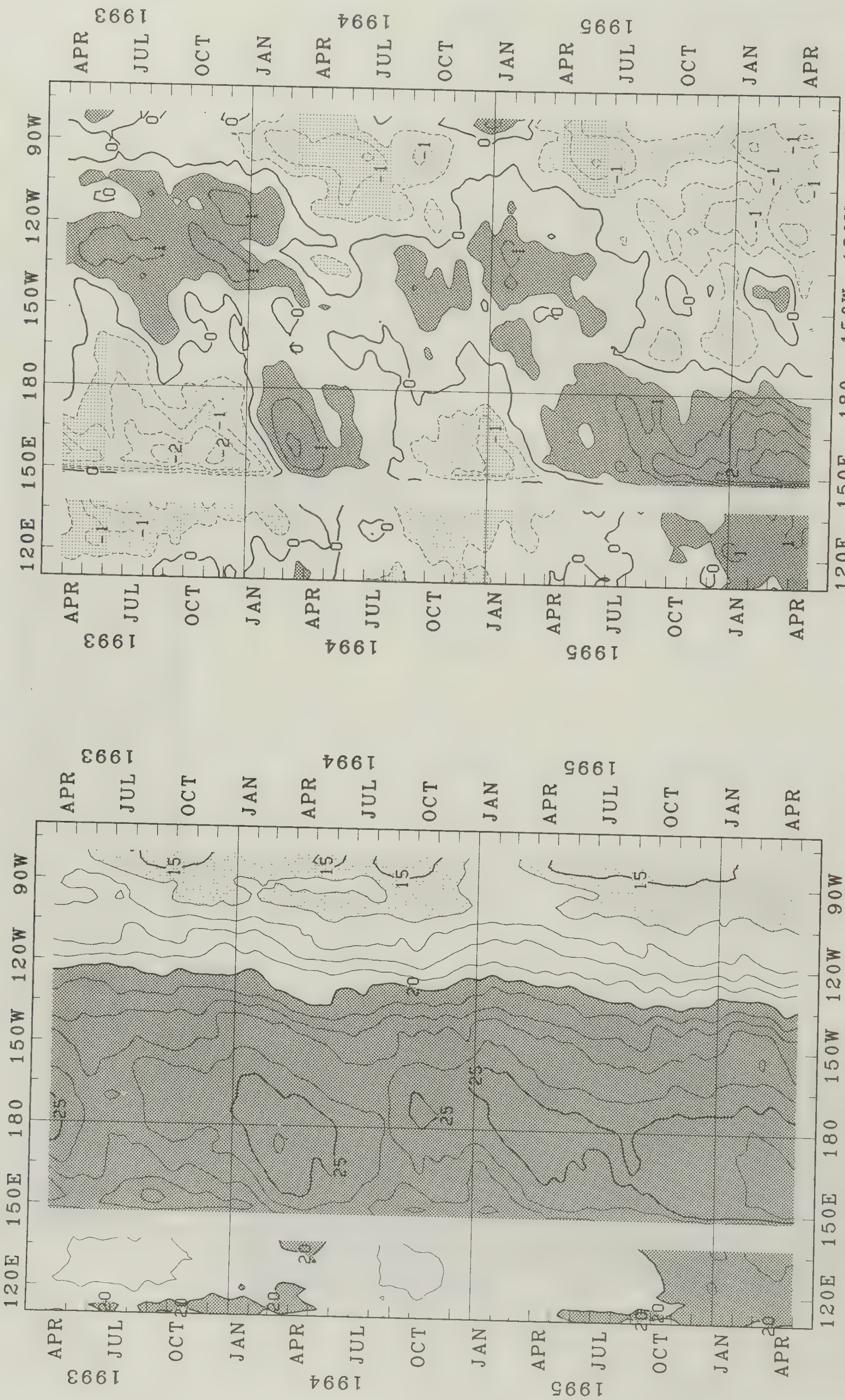
Fig.17 Time-longitude sections of ocean heat content in the upper 260m along 6°N (left) and anomalies (right) in the Pacific Ocean. Data are derived from an Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.



第18図　太平洋の赤道に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

Fig.18 Time-longitude sections of ocean heat content in the upper 260m along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

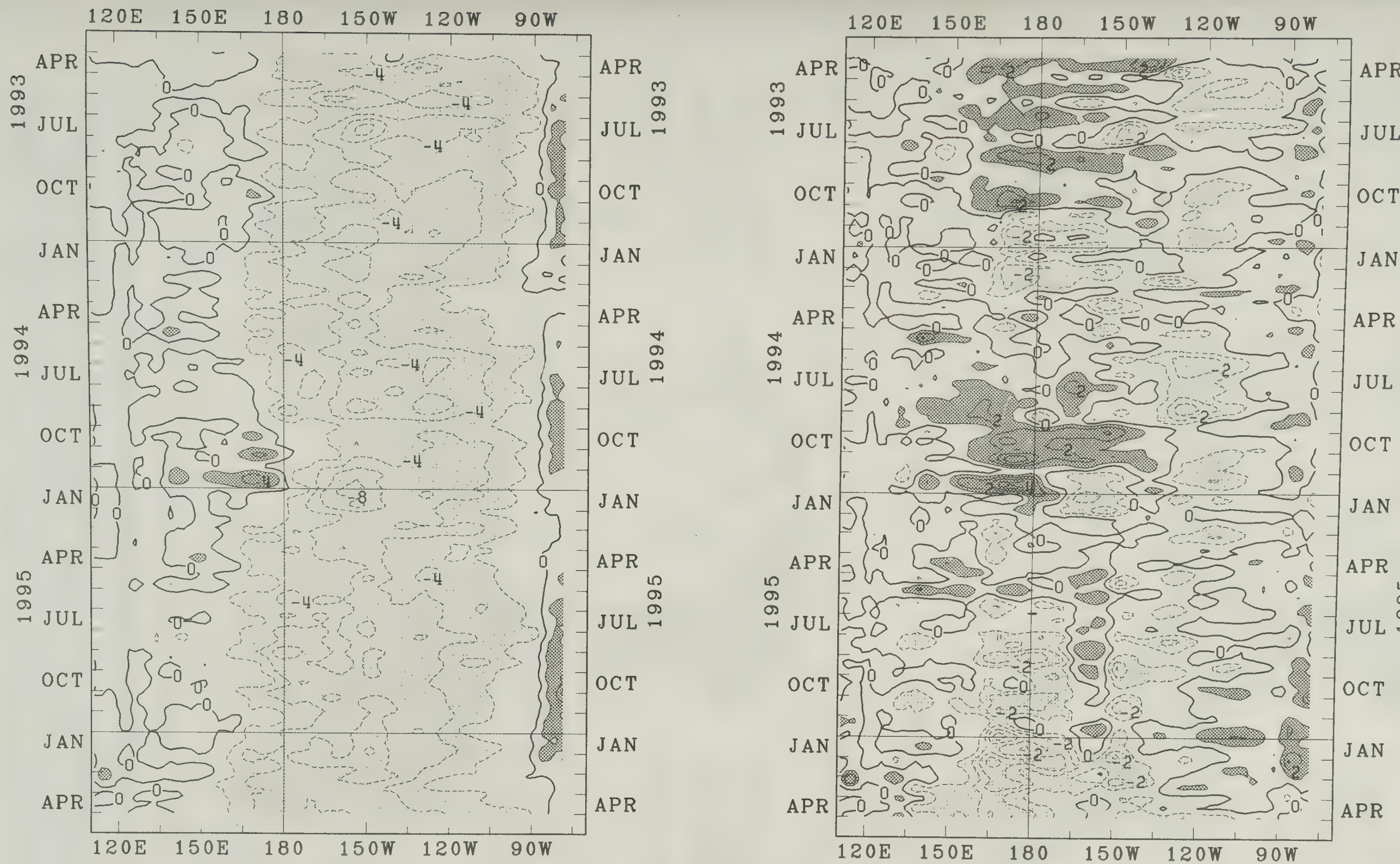
Time–Longitude Section of Ocean Heat Content & Anomalies (6S)



第19図　太平洋の南緯6度線に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

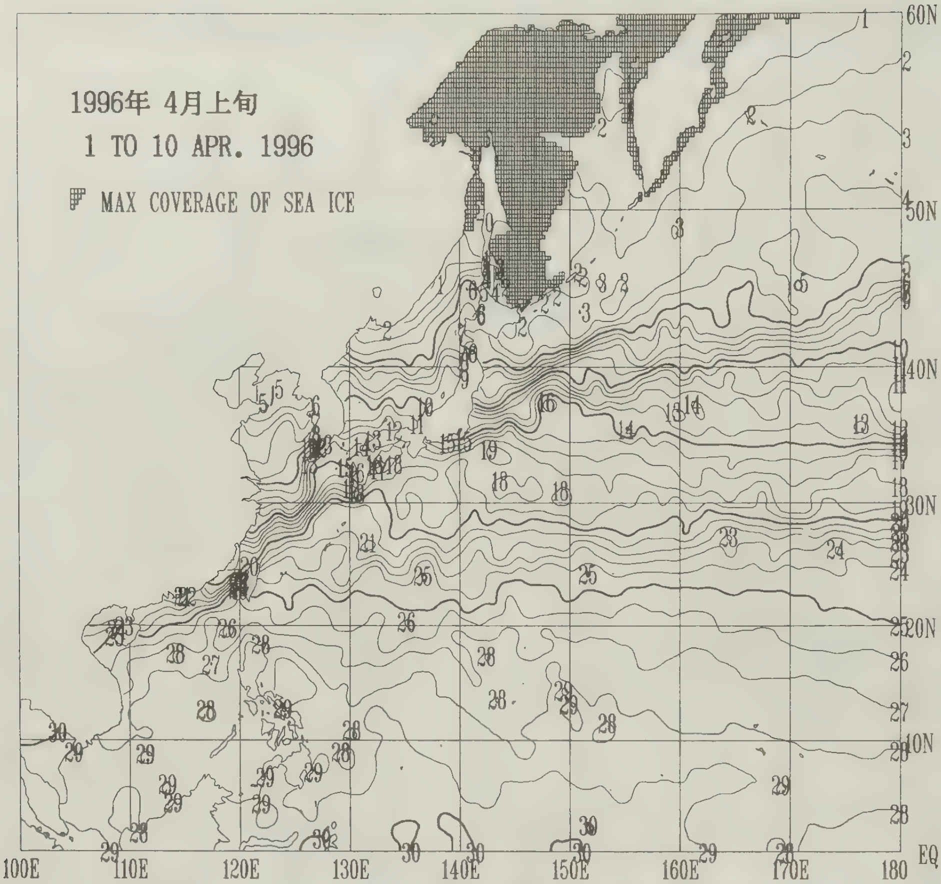
Fig.19 Time-longitude sections of ocean heat content in the upper 260m along 6°S (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C (left) and 0.5°C (right). Values in the left panel greater than 20°C are shaded and values less than 16°C are spotted. Dashed contours in right panel indicate negative anomalies. Anomalies are computed from 1987-1995 base period means.

Time–Longitude Section of Surface Zonal Wind Stress & Anomalies (Eq.)

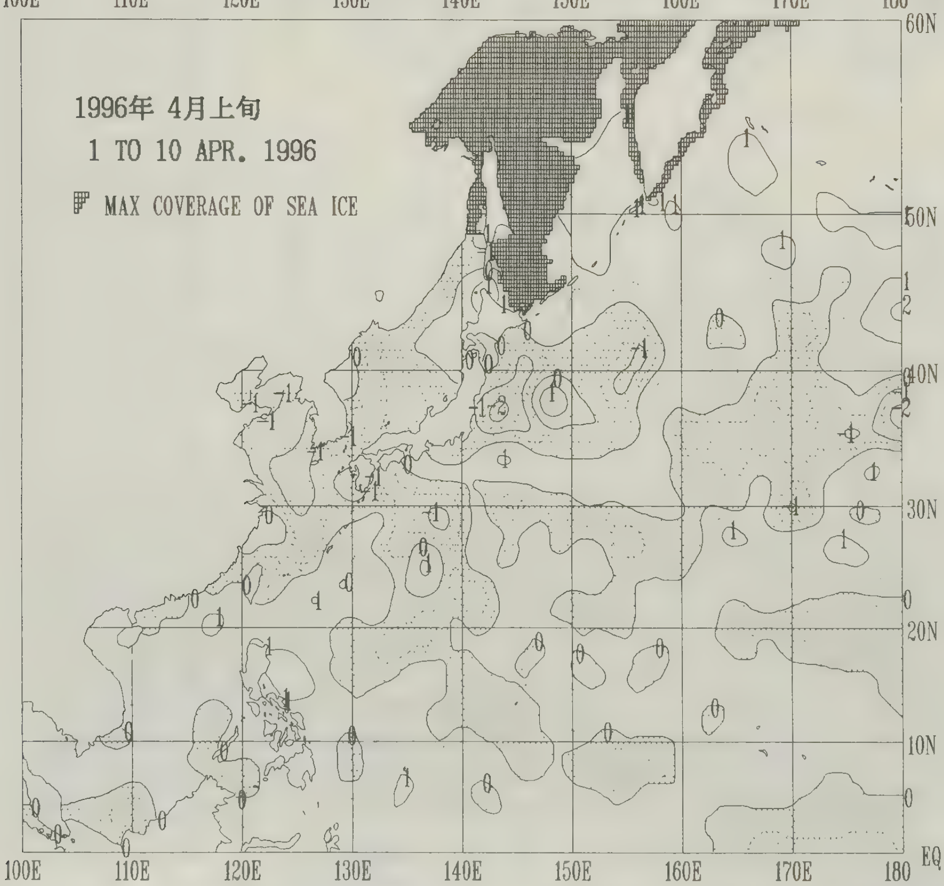


第20図　太平洋の赤道に沿う海面の風応力の東西成分（左）及び偏差（右）の時間－経度断面図

Fig.20 Time-longitude sections of surface zonal wind stress along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Atmospheric Global Data Assimilation System of JMA. Contour interval is 0.02N/m2 (left) and 0.01N/m2 (right). Dashed contours indicate easterlies (left) and easterly anomalies (right). Anomalies are computed from 1987-1995 base period means.



旬平均沿岸水温(℃) Coastal Water Temperature		
地点名 (Index Number)	水温 Temp.	偏差 Anom.
石垣島(47918)	23.0	-0.1
御前崎(47655)	12.6	-1.6
八丈島(47678)	18.5	+0.4
小名浜(47598)	8.1	-1.4
宮　古(47585)	5.8	-0.3
江　差(47428)	6.6	-
浜　田(47755)	12.5	-

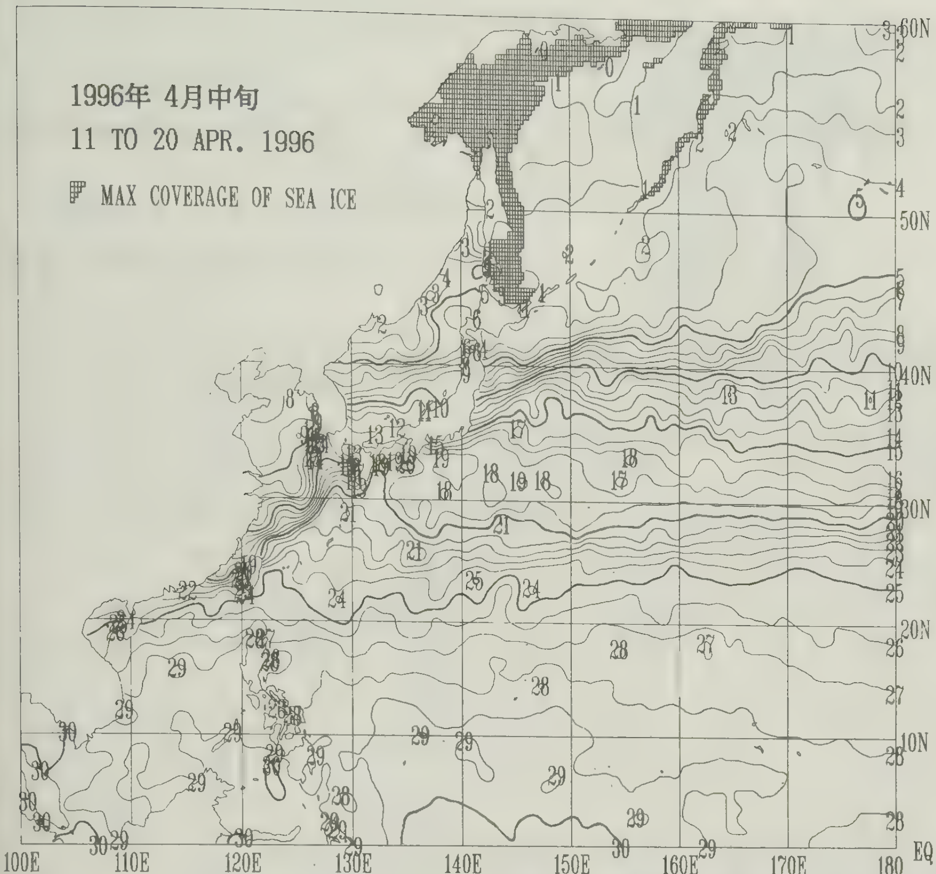


海洋気象ブイロボット
旬平均海面水温(℃)
Ocean Data Buoy SST

日本海	37.9N,134.5E	8.4
四国沖	29.0N,135.0E	18.9
東シナ海	28.2N,126.3E	21.3

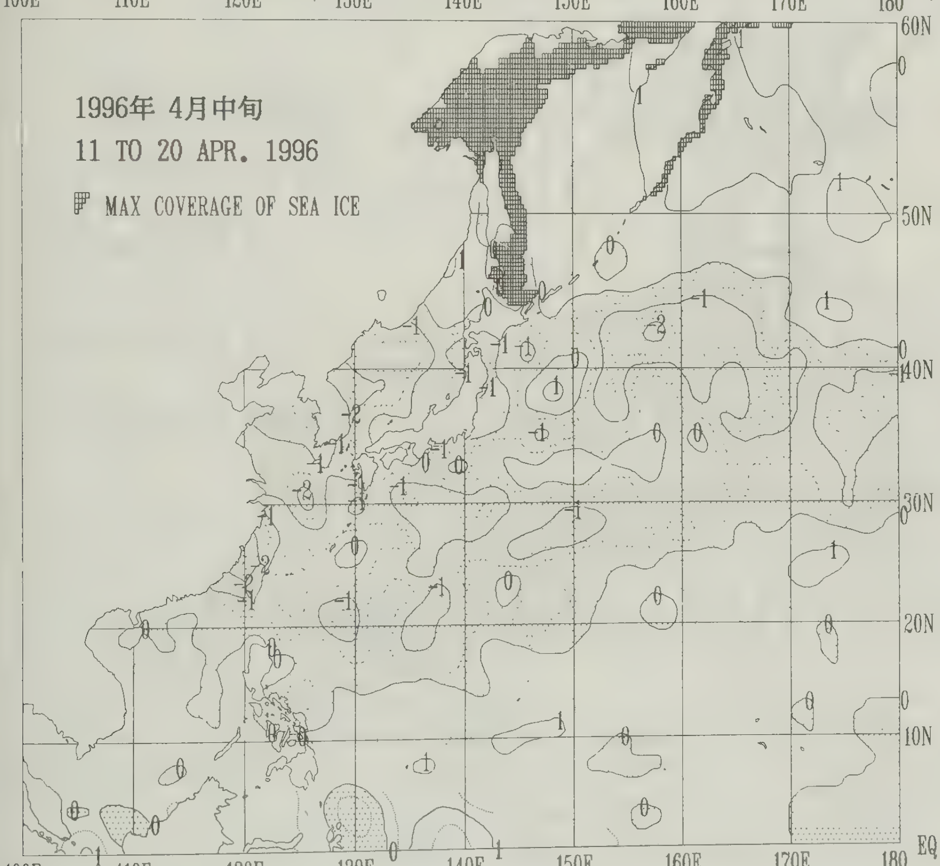
第21図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年 4月上旬)

Fig.21 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 1st ten-day period in APR 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



旬平均沿岸水温(℃)
Coastal Water Temperature

地点名 (Index Number)	水温 Temp.	偏差 Anom.
石垣島(47918)	23.5	-0.3
御前崎(47655)	12.9	-2.4
八丈島(47678)	18.8	-0.1
小名浜(47598)	9.6	-0.8
宮　古(47585)	6.3	-0.2
江　差(47428)	8.2	-
浜　田(47755)	13.1	-

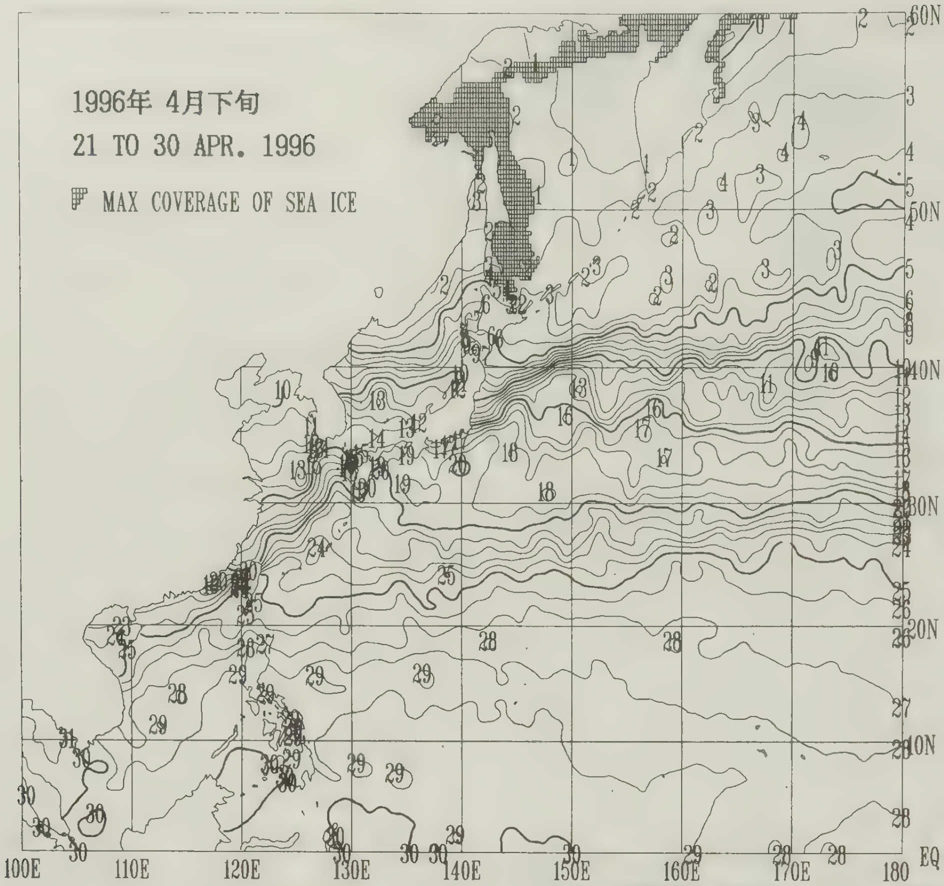


海洋気象ブイロボット
旬平均海面水温(℃)
Ocean Data Buoy SST

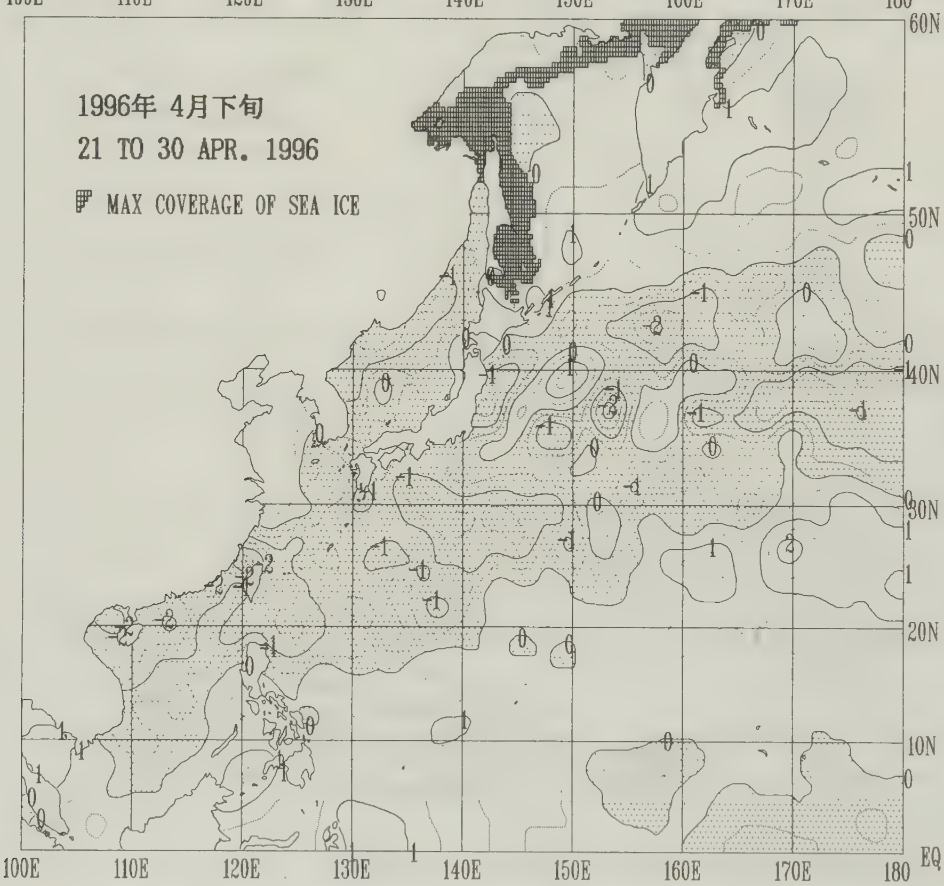
日本海	37.9N,134.5E	8.8
四国沖	29.0N,135.0E	19.6
東シナ海	28.2N,126.3E	20.8

第22図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年 4月中旬)

Fig.22 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 2nd ten-day period in APR 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



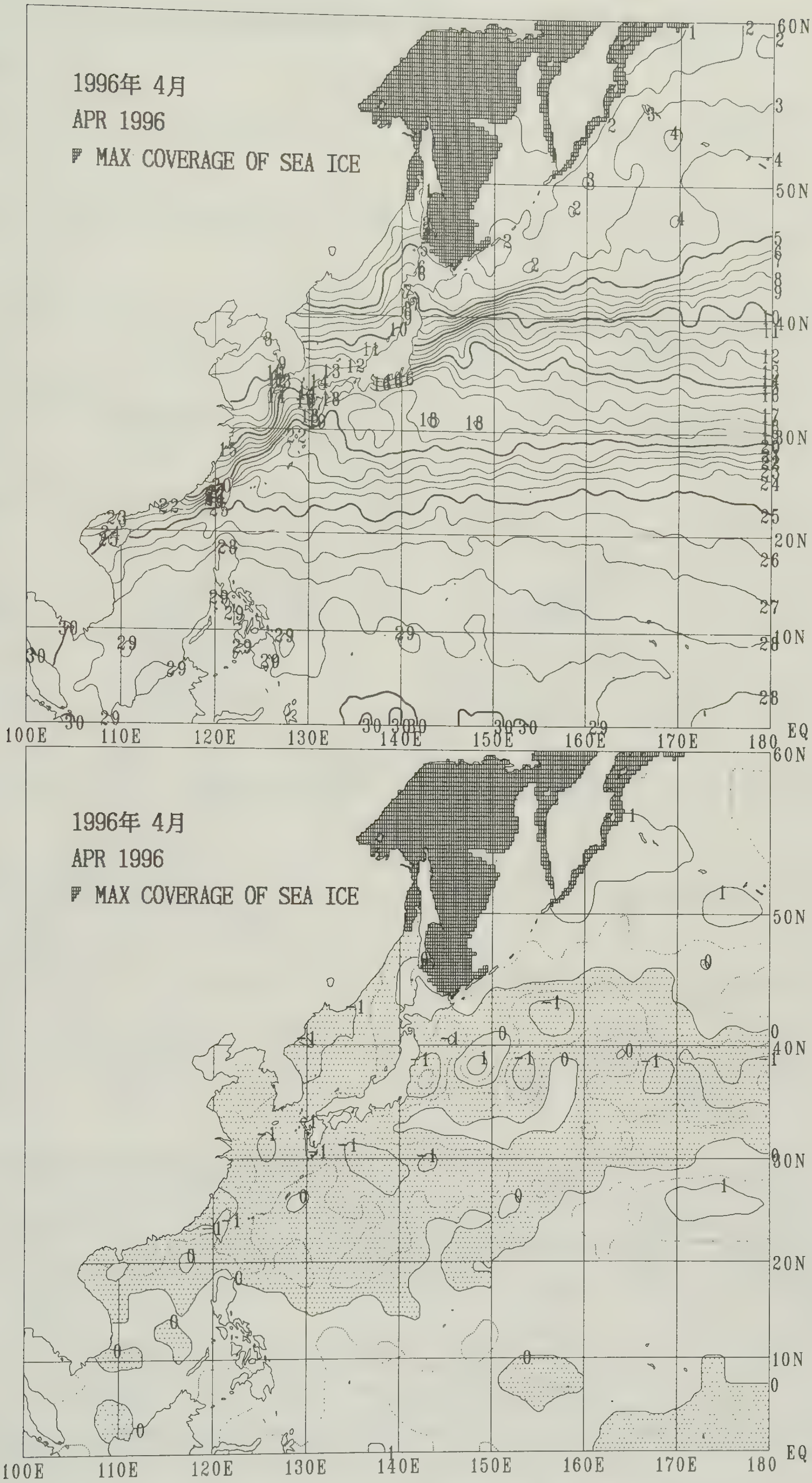
旬平均沿岸水温(℃) Coastal Water Temperature		
地 点 名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣(47918)	23.3	-1.4
御前崎(47655)	14.5	-1.9
八丈島(47678)	19.6	0.4
小名浜(47598)	10.6	-0.3
宮　古(47585)	7.7	0.6
江　差(47428)	9.8	-
浜　田(47755)	14.8	-



海洋気象ブイロボット 旬平均海面水温(℃) Ocean Data Buoy SST		
日 本 海	37.9N,134.5E	10.4
四 国 沖	29.0N,135.0E	19.1
東シナ海	28.2N,126.3E	23.1

第23図 北西太平洋旬平均海面水温図(上)及び偏差図(下)(1996年 4月下旬)

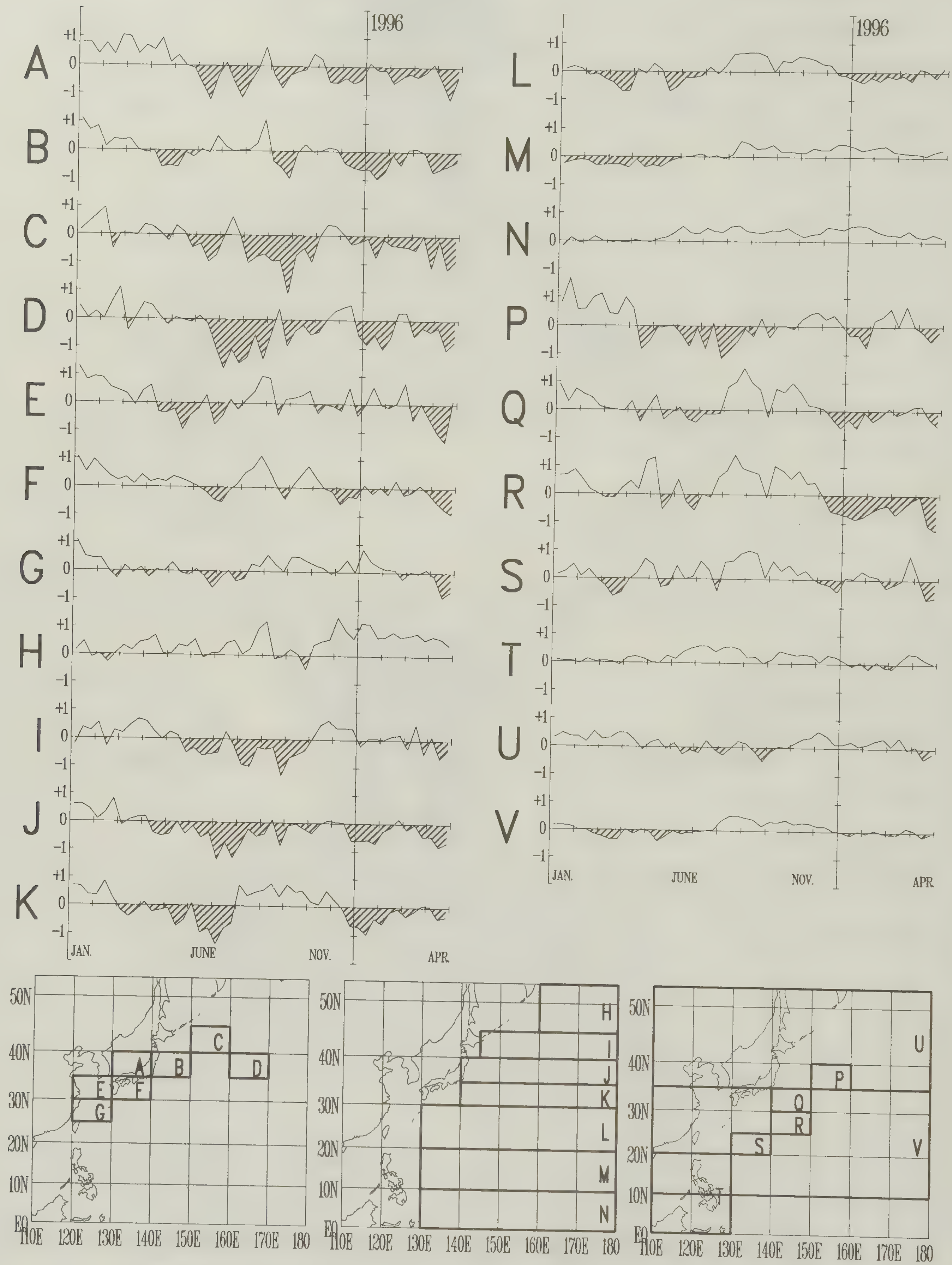
Fig.23 Ten-day mean SSTs in the western North Pacific (top) and anomalies (bottom) for the 3rd ten-day period in APR 1996. Anomalies are computed from the JMA climatology (1961-90). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.



第24図 北西太平洋月平均海面水温図(上)及び偏差図(下)(1996年 4月)

Fig.24 Monthly mean SSTs in the western North Pacific (top) and anomalies (bottom) for APR 1996. Anomalies are computed from the JMA climatology (1961-1990). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown as broken lines. Negative anomalies are spotted.

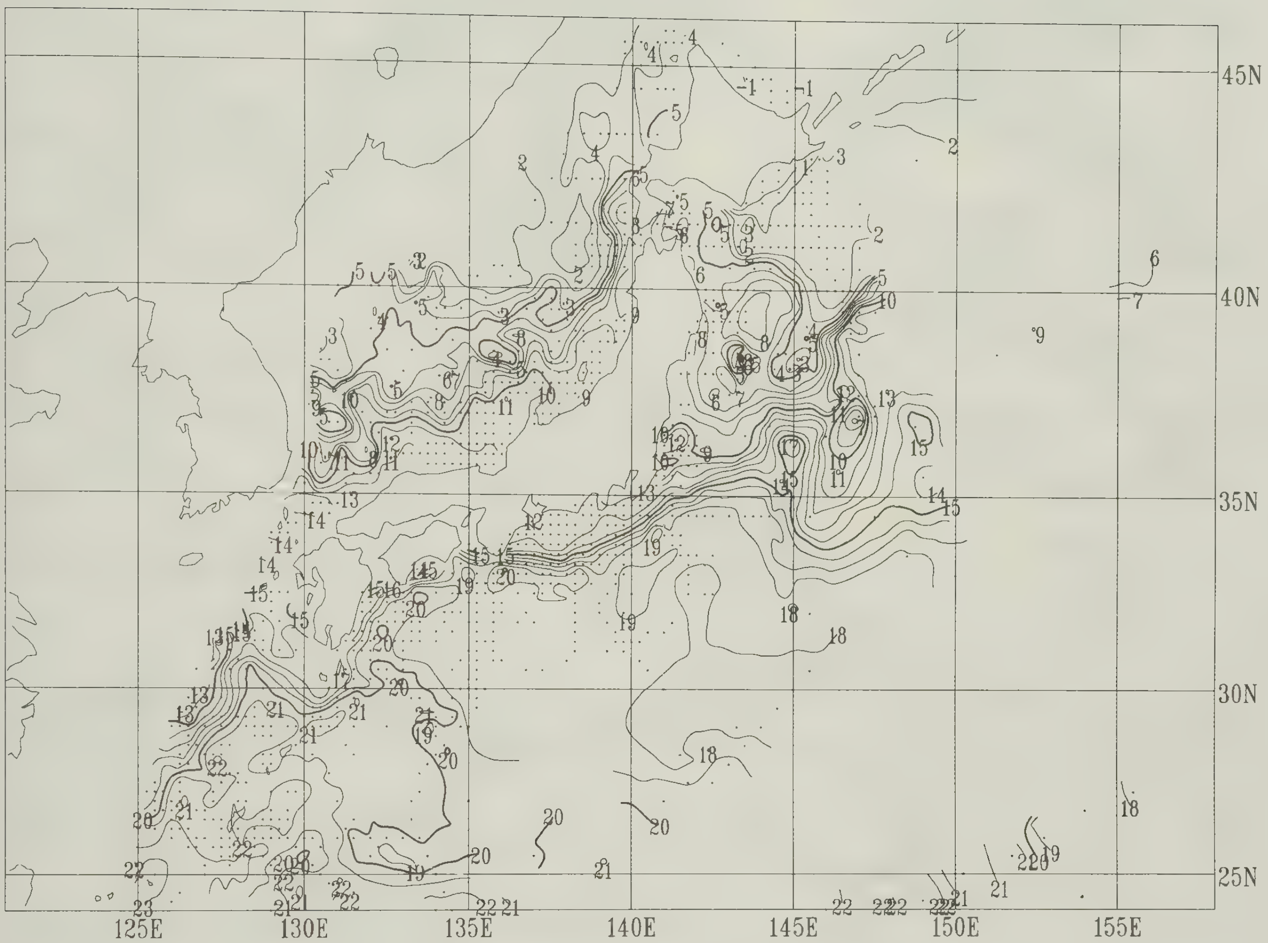
Time Series of Area Mean SST in the Western North Pacific



第25図　北西太平洋旬平均海面水温平年偏差時系列図

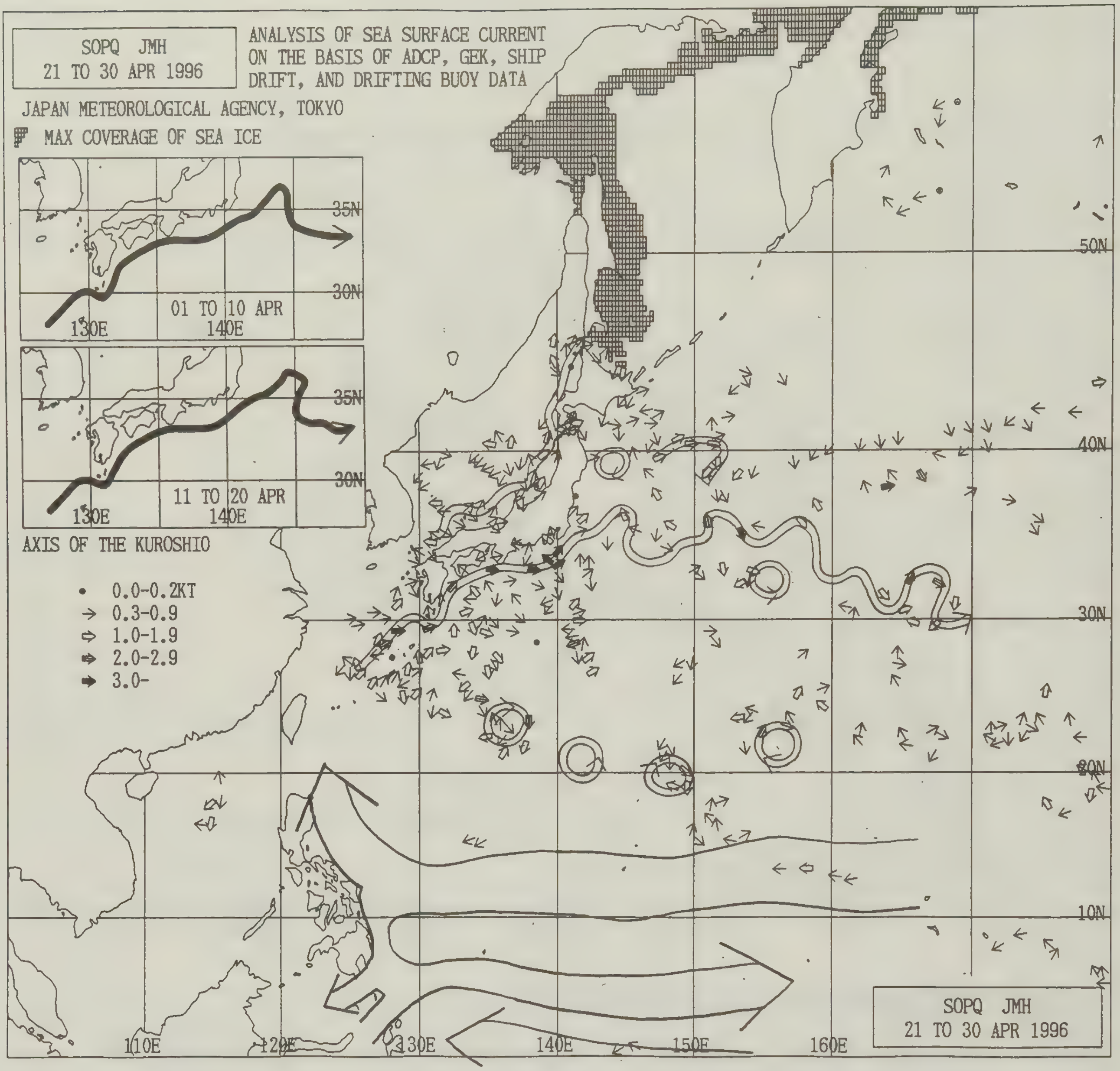
Fig.25 Time series of the ten-day mean sea surface temperature anomalies (°C) in the western North Pacific for the areas indicated at the bottom. Negative anomalies are shaded. Anomalies are computed from the JMA climatology (1961-90).

100m Temperatures in Seas Adjacent to Japan



第26図　日本近海表層水温(深さ100m)図 (1996年 4月)

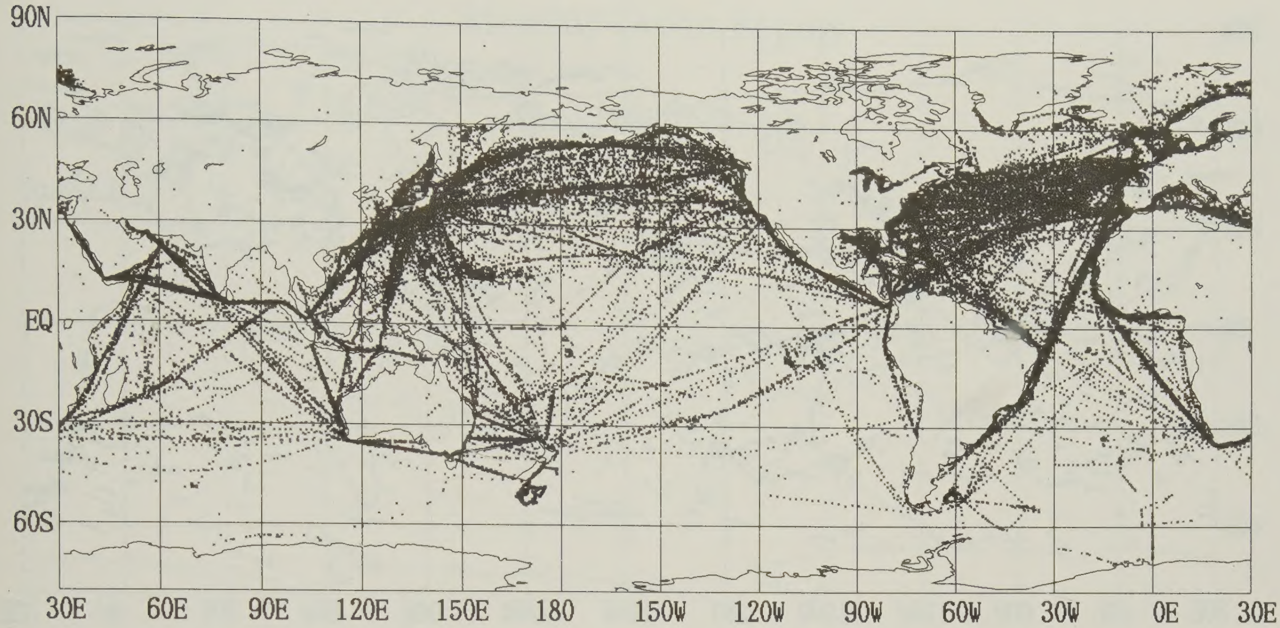
Fig.26　Subsurface (100m) temperatures in seas adjacent to Japan for APR 1996. Contour interval is 1°C.　Observation points are denoted by dots.



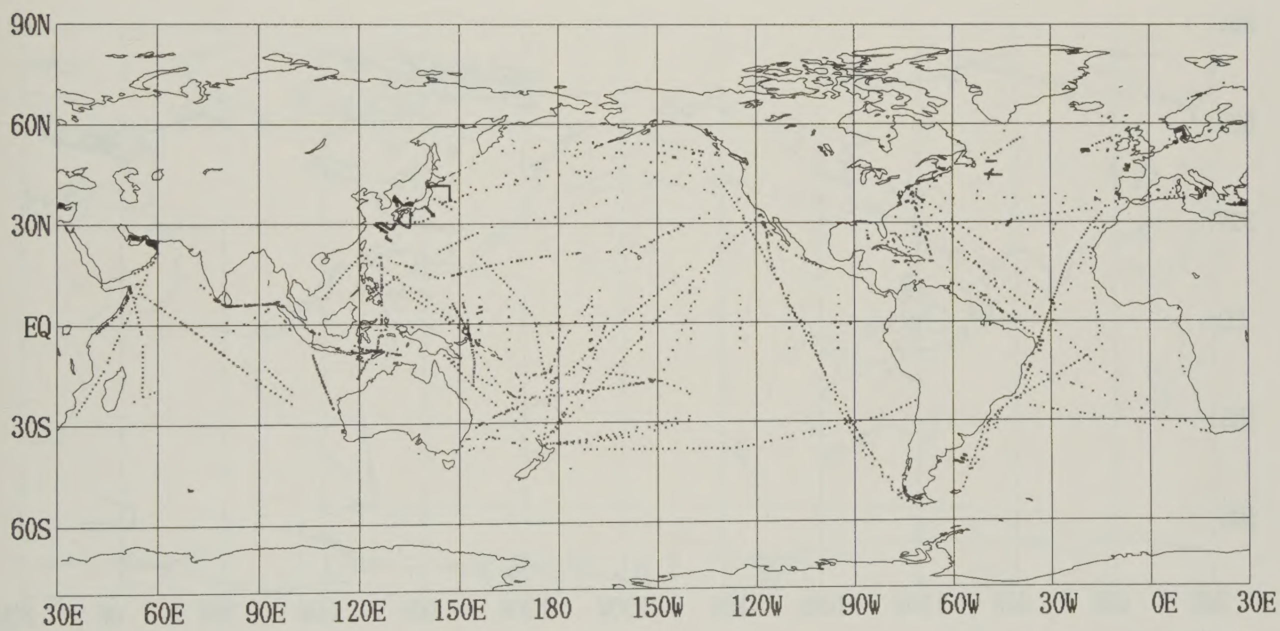
第27図　北西太平洋海流図 (1996年 4月下旬)

Fig.27 Analysis of the sea surface current in the western North Pacific for the 3rd ten-day period in APR 1996. Small arrows indicate sea surface currents measured with acoustic Doppler current profilers, GEKs deployed in research vessels, and ship drift by merchant ships/drifting buoys during the month. Major currents such as the Kuroshio and the North Equatorial Current

Geographical Distribution of Oceanographic Data



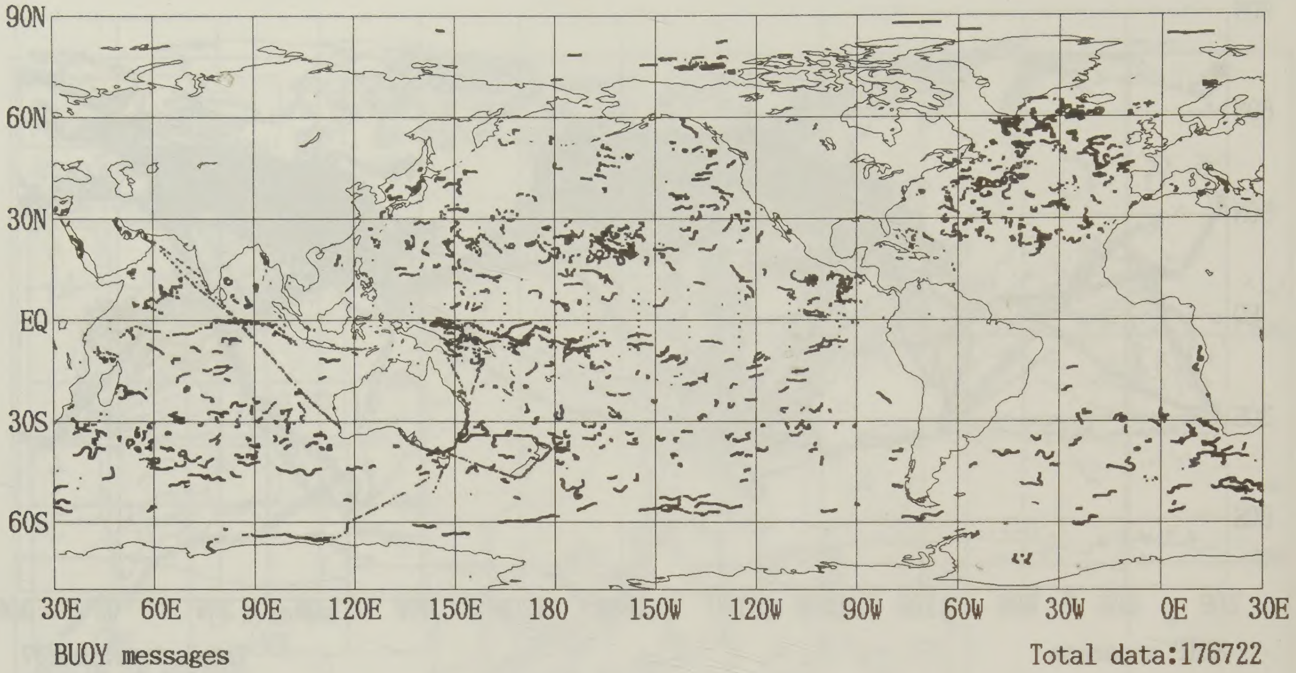
SHIP messages Total data:105237

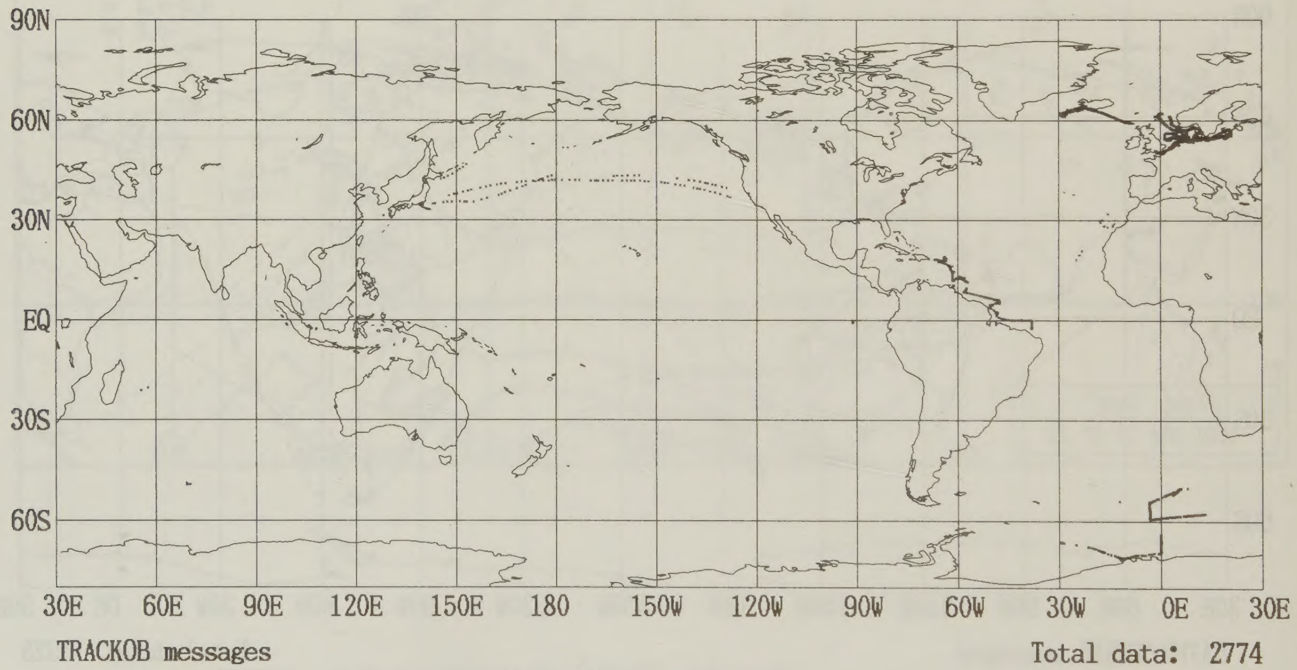


BATHY/TESAC messages Total data: 3928

第28-1図 測点分布図(1996年 4月)

Fig.28-1 Geographical distribution of SHIP messages (SST data, top) and BATHY/TESAC messages (subsurface temperature data, bottom) for APR 1996.





第28-2図　測点分布図(1996年 4月)

Fig.28-2 Geographical distribution of BUOY messages (buoy drift and SST data, top) and TRACKOB messages (ship drift and SST data, bottom) for APR 1996.

気象庁海洋月報

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